Upper Little Deschutes Restoration Project

Crescent Ranger District
Deschutes National Forest

Wildlife Report

Includes:

1. **Biological Evaluation**
2. **Management Indicator Species,**
3. **Birds of Conservation Concern,**
4. **Landbird Conservation Strategy Focal Species**
5. **Literature Used and References Cited**

Prepared by: _____ **Date: 24 May 2019**

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Updated document from original signed 16 November 2018

Updated 2/7/2019 to include DS 20 which was inadvertently left out and clarify treatment in oxbows.
Updated 4/22/2019 to utilize the March 2019 R6 Regional Forester's Sensitive Species list.
Updated 5/15/2019 as a result of consultation. Changed determination on OSF CHU, supplemented analysis for OSF. Updates in Mitigation measures pertaining to OSF.
Updated 5/24/2019 to include a portion of CHU analysis from BA

INTRODUCTION

ECOSYSTEM SERVICES

The project area is on the Upper Little Deschutes River where unique habitat provides for wildlife and fish. The area is important to many generations of the local community for a variety of reasons, like clean water, wildlife viewing, camping, hunting, fishing, and solitude. The Forest Service is approaching this project by looking at the environmental services, the benefits the project area provides, recreation experiences for the public, wildlife habitat, water quality and scenic views. The Forest Service proposes to manage for this full suite of benefits not only for the public, but also focusing on hydrologic improvement for fish and the Oregon spotted frog (OSF). The goal of the project is to provide sustainable benefits that people receive from the project area currently and allow the area to continue to provide this diverse range of benefits into the future.

PROJECT DESCRIPTION AND LOCATION

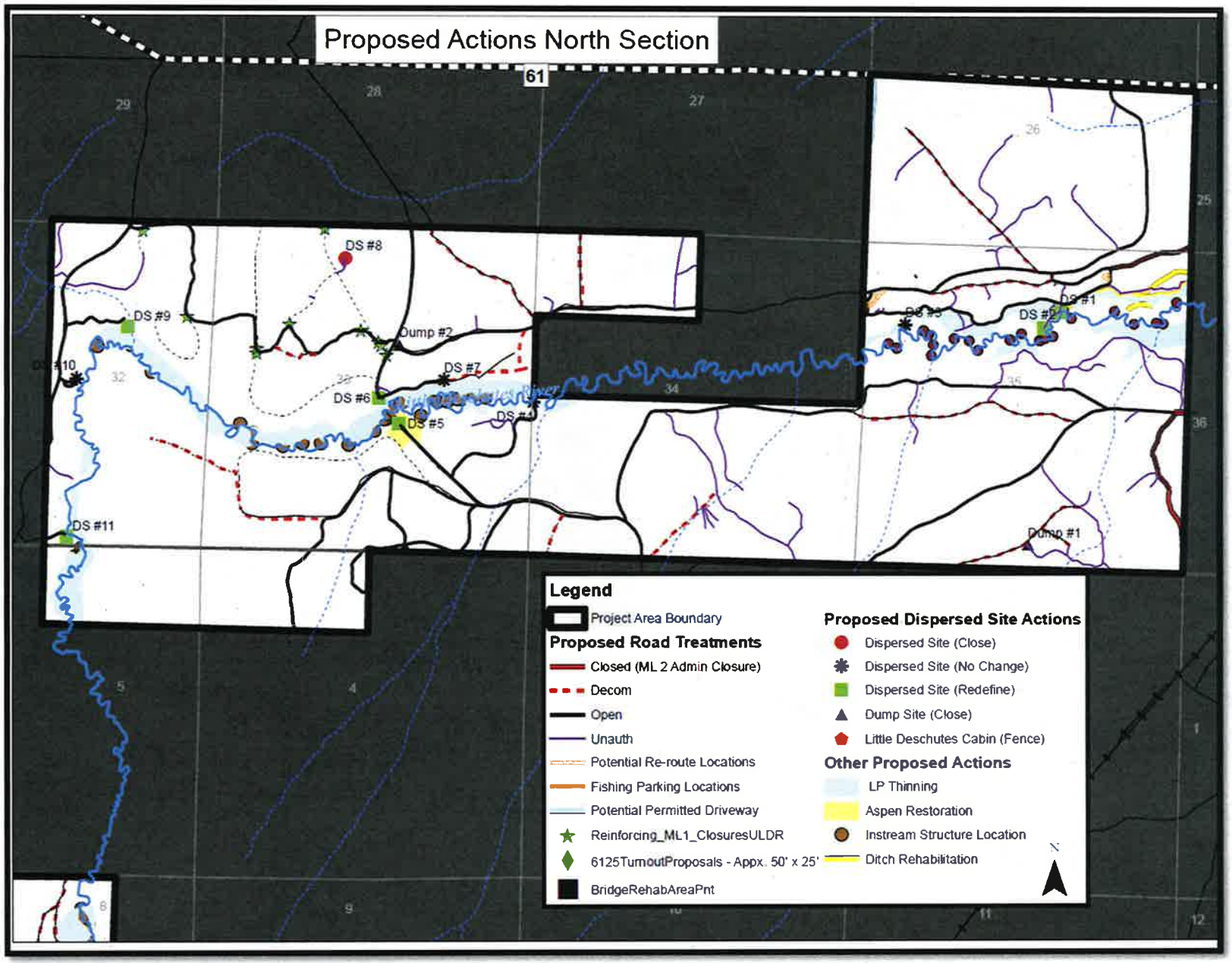
The Upper Little Deschutes Restoration (ULDR) project has three major components: riparian enhancement, sustainable recreation and roads (Intro Figures 1 and 2). The following is a summary of proposed actions, see Chapter 2 of the environmental analysis for a more detailed description.

Riparian enhancement and restoration would include the enhancement of habitat for Oregon spotted frogs and various trout species through the installation of instream structures, reconnecting side channels, closing an unauthorized water diversion, removing unauthorized bridges and trails, resizing dispersed sites away from the stream and removing lodgepole pine from stringer meadows and aspen stands. Restoration would include the use of hand and mechanized equipment, placement of log structures, digging ponds, contouring banks and planting of native vegetation. Instream structure locations in Intro Figures 1 and 2 are approximate.

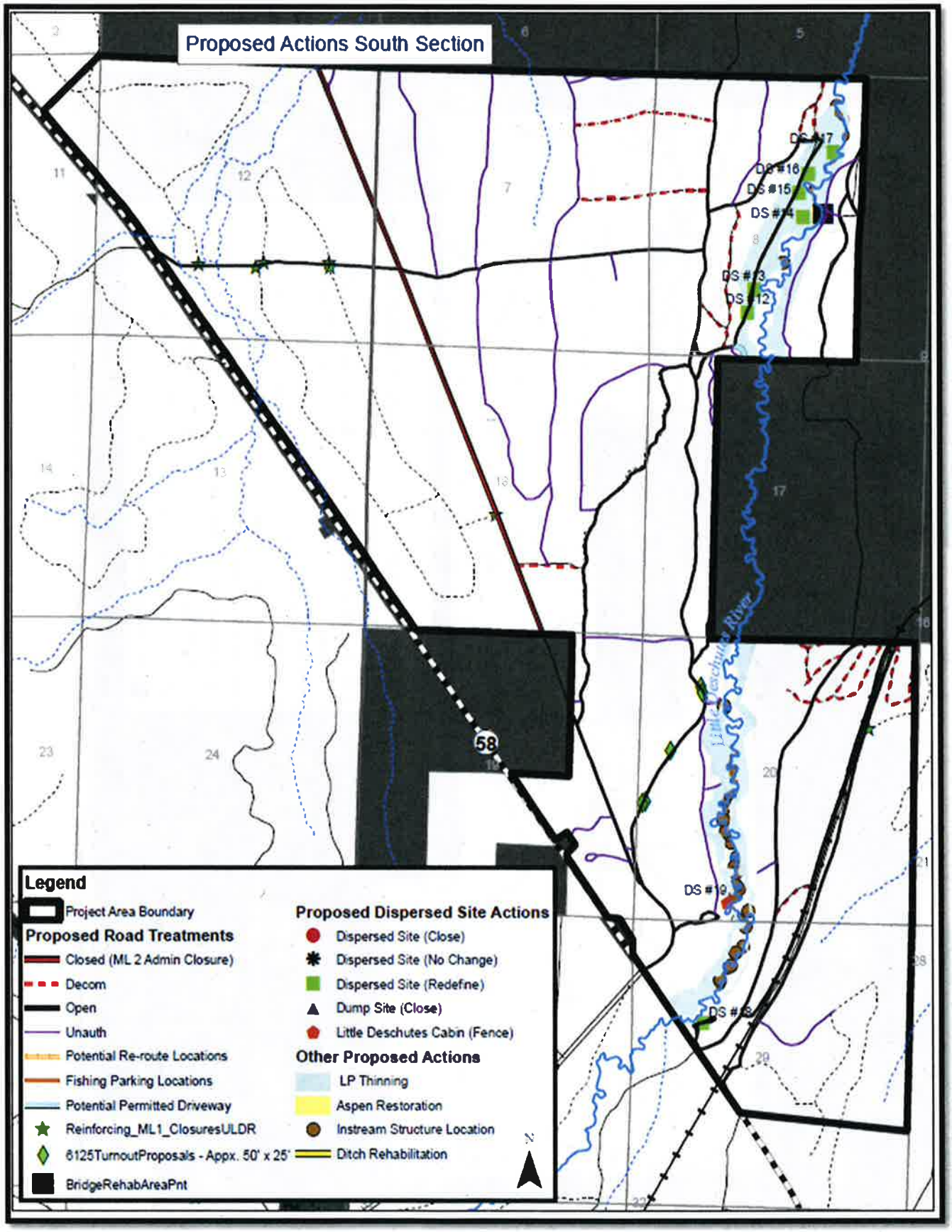
Sustainable recreation proposed actions would provide recreational opportunities while reducing impacts to riparian and sensitive upland wildlife habitat. There are 19 dispersed sites (DS) and two dump sites (DUMP) that have been identified in the planning area. Of the 19 dispersed sites, 14 would receive some form of boundary refinement by pulling boundaries away from riparian areas, one site would be completely decommissioned and rehabilitated with native vegetation, and one site would have an interpretive site installed. The remaining 4 dispersed sites do not need changes at this time, but would have increased Field Ranger Presence to maintain existing footprint. The two dump sites would be cleaned up and rehabilitated. Actions include but not limited to: closing roads to sites or designating roads as part of the transportation system; utilizing boulders, fences or other materials to redefine the site; hand and/or mechanized equipment loosening and/or contouring, banks, soils surface; and planting of native vegetation.

Sustainable transportation proposed actions creates a road system that provides public access throughout the planning area while increasing wildlife security and reducing the resource damage, vegetation removal, and sedimentation into the river. Approximately 9.37 miles of National Forest System Roads and 17.18 miles of unauthorized roads would be decommissioned. Approximately 2.48 miles of currently closed National Forest System Roads would be opened to motorized traffic along with 0.0.2 miles of unauthorized roads added to the system. Gulick road would have turnouts installed for snow plowing and Forest entry/leaving signs would be installed at property lines. Within the project area any currently unknown unauthorized trail or route, or those created in the future would not be part of the designated transportation system and would be decommissioned and rehabilitated to the degree needed to return the ground to a productive state. Decommissioning would take place as they are located to maintain the proposed density levels.

The legal description of this project: Township 24S, Range 8E, Sections 26, 32, 33, 34, 35 and Township 25S, R08E Sections 4, 5, 8, 17, 19, and 20, Willamette Meridian



Into Figure 1. Proposed Action North



Into Figure 2. Proposed Action South

Wildlife Design Criteria and Mitigation Measures

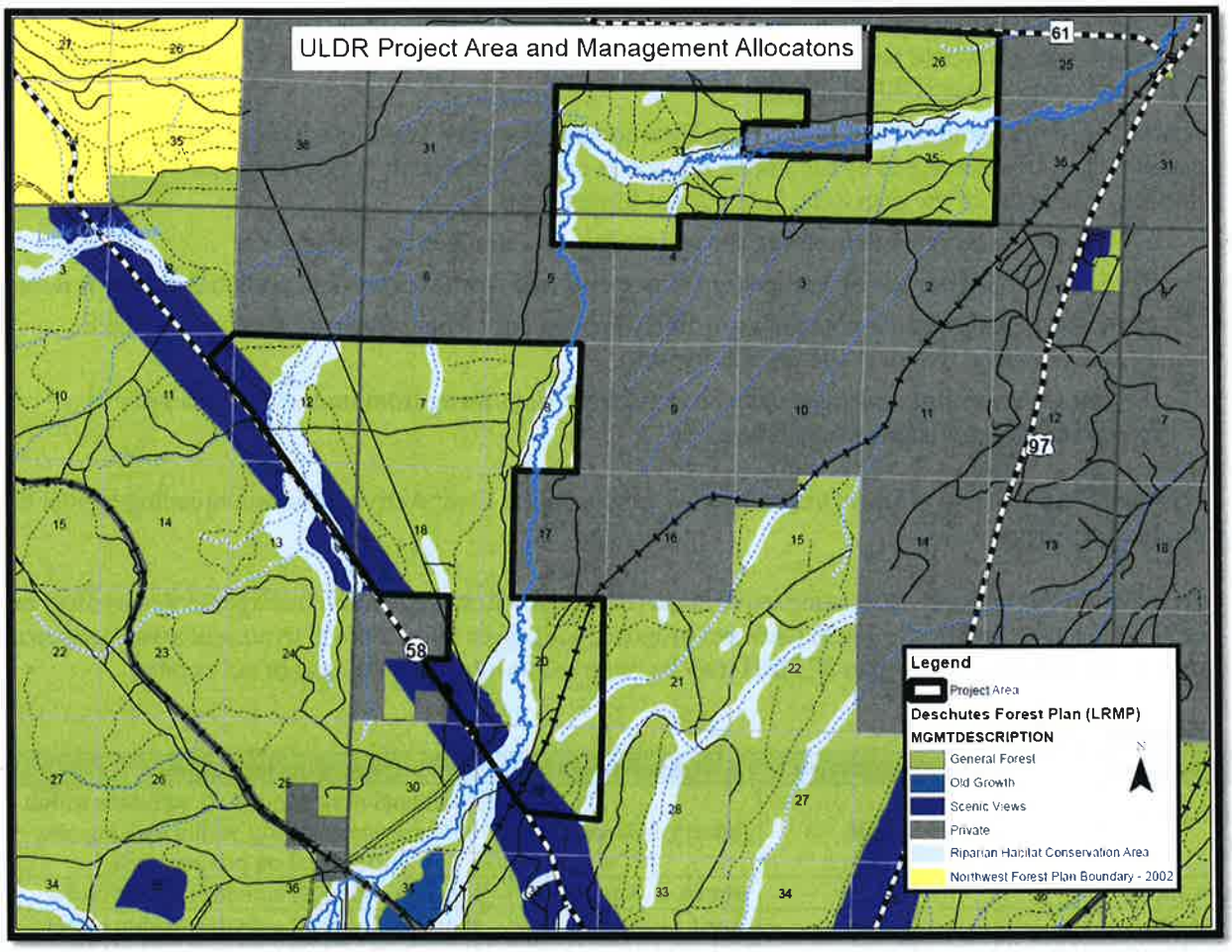
1. No trees over 21 inches DBH would be cut or pulled over in either the lodgepole pine removal projects or to provide instream structures.
2. The majority of side channels or oxbows will use the elevated water table created by instream structures to reconnect during spring high flows and disconnect as water levels drop. Depending on ground conditions and location equipment may be utilized to reconnect some of the oxbows. Existing or created deep pools would be constructed for reconnecting only during high flow to maintain separation of Oregon spotted frog (OSF) and fish.
3. A detailed Implementation and Monitoring Plan, including survey, capture/relocation details, will be developed and implemented by the Forest Service in coordination with the US Fish and Wildlife Service. Elements of the plan to include but not limited to:
    a. Surveying all reaches in spring for egg masses and summer/fall for adults.
    b. Survey just prior to implementation where ever and whenever work in potential habitat is done.
    c. Capture and relocation would most likely happen only where frogs are confined (ie ditch, unconnected oxbows) and not the stream.
    d. For instream structure placement activity chase frogs away from immediate area prior to structure installation would take place.
4. Seasonal Restriction to protect Oregon spotted frog breeding sites: Activities within breeding habitat to occur after August 1.
5. To maintain the integrity of existing leave areas (designated from vegetation management activities) or LOS connectivity corridors that extend into proposed lodgepole pine removal treatment areas, lodgepole pine in the understory less than 8" DBH may be removed as long as openings are not created.
6. Seasonal restrictions

Species	Buffer Distance	Restricted Season	Actions Restricted
Northern Bald Eagle (nest)	¼ mile	January 1-August 31	If additional nest is found all activities within buffer, none currently within existing nest buffer (nest on private lands)
Goshawk (nest)	¼ mile	March 1- August 31	If nest is found all activities within buffer
Osprey (nest)	¼ mile	April 1 – August 31	If nest is found all activities within buffer
Red-tailed hawk (nest)	¼ mile	March 1 – August 31	If nest is found all activities within buffer
Sharp-shinned hawk (nest)	¼ mile	April 15 – August 31	If nest is found all activities within buffer
Cooper's hawk (nest)	¼ mile	April 1 – August 31	If additional nest is found all activities within buffer, none currently within existing nest buffer
Great gray owl (nest)	¼ mile	March 1 – June 30	If nest is found all activities within buffer
Northern waterthrush	Occupied nesting habitat	May 15- August 1	Lodgepole pine removal, pile burning, stream enhancement.
Deer and Elk (fawning/calving habitat)	¼ mile	May 1 – June 30	All proposed actions within 0.25 mi of river

PROJECT AREA AND ANALYSIS AREA.

The ULDR project area consists of approximately 6,286 acres of Forest Service lands along the Little Deschutes River between highway 58 and Forest Service road 61, in two sections divided by private lands (Intro Figure 3). The proposed actions are not broad scale across a large area, but focused on specific areas within the project area. While existing conditions may cover a broader area, the Zone of Influence for discussion of direct, indirect and cumulative effects from treatments is bounded by the project area for all species. The analysis area is the project area for all species and will be referred to as the project area within the effects discussion. This Wildlife report includes Threatened, Endangered and Sensitive Species (TES), Management Indicator Species

(MIS), Birds of Conservation Concern (BCC), High Priority Shorebirds, and Landbird Strategic Plan Focal Species (LBFS). Since the project area is outside the range of the northern spotted owl there is no section on Survey and Manage.



Intro Figure 3. Upper Little Deschutes Restoration Project Area and Management Allocations

MANAGEMENT DIRECTION

The following sections meet the direction provided by the Forest Service Manual FSM 2600, the Deschutes National Forest Land and Resource Management (LRMP) (Deschutes LRMP; USDA Forest Service 1990) as amended by Interim Riparian, Ecosystem, and Wildlife Standards (Eastside Screens), Programmatic BA, and Forest Service guiding regulation and policy. Management allocations within the project area include General Forest Scenic Views and Riparian Habitat Conservation Areas. Northwest Forest Plan does not apply as the project is outside of the range of the northern spotted owl. Deschutes LRMP direction and consistency are found at the end of this document.

Other Regulatory Direction

- **Endangered Species Act (ESA).** The Endangered Species Act of 1973 (16 USC 1531 et seq.) requires that may action authorized by a federal agency not be likely to jeopardize the continued existence of a threatened or endangered species, or result in the destruction or adverse modification of habitat of such species that is determined to be critical.

- **Forest Service Manual and Handbooks (FSM/H 2670)**: Review of all Forest Service planned, funded, executed, or permitted programs and activities for possible effects on endangered, threatened, proposed or sensitive species is to be completed and documented within a biological evaluation.
- **Bald Eagle and Golden Eagle Protection Act 1940:** Even though they are delisted, bald eagles are still protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.
- **The Migratory Bird Treaty Act of 1918 (MBTA)**: Implements various treaties and conventions between the U.S., Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds.
    - **Executive Order 13186 (66 Fed. Reg. 3853, January 17, 2001) "Responsibilities of Federal Agencies to Protect Migratory Birds"** This Executive Order directs federal agencies to avoid or minimize the negative impact of their actions on migratory birds, and to take active steps to protect birds and their habitat.
    - **Forest Service & USFWS MOU:** The purpose of this MOU is, *"to strengthen migratory bird conservation by identifying and implementing strategies that promote conservation and avoid or minimize adverse impacts on migratory birds through enhanced collaboration between the Parties, in coordination with State, Tribal, and local governments."* Under the MOU the FS Shall: *When developing the list of species to be considered in the planning process,* ***consult the current FWS Birds of Conservation Concern, 2008 (BCC)****, State lists, and comprehensive planning efforts for migratory birds.*(MOU 2008)

ASSUPTIONS

- If appropriate habitat components are available, then a species occupies or could occupy the habitat.

- The wildlife sightings discussed in the following sections came from species specific surveys as noted and from random observations while conducting other forest management activities. Wildlife sightings are from observers whose wildlife identification skills range from limited to experience. Thus, some wildlife sightings are considered unconfirmed observations.

- Sightings from random observations implies presence of a species, lack of observations does not imply a given species is absent.

- All past management actions have led to and are considered part of the existing condition.

ANALYSIS METHODS

In the absence of scientifically rigorous surveys for all species listed within the different tables, a species was presumed present if habitat components are available or could occupy the habitat. Analysis focused on the habitat components and disturbance potential. Examples of specific habitat components analyzed include: snags, down wood, late/old structural habitat, freshwater emergent vegetation, hardwoods, ect. Examples of disturbance potential include: recreational use, implementation of actions. Conclusions as to the whether the proposed actions would or would not contribute to a change in population viability trends and/or effects were determined by assessing how the alternatives impact the structure and function of the habitat components.

Some wildlife habitats required a more detailed analysis and discussion. Level of analysis depended on the existing habitat conditions (i.e. limited habitat availability versus widespread habitat availability), the magnitude and intensity of the effects of the proposed actions (i.e. would the proposed actions cause a loss, no change, or increase in habitat), the risk to the resources (sustainability and availability of the habitat). These factors were used to form conclusions as to how the information, in regards to the effects, would be useful and relevant in the process of making an informed decision.

Modeling Methodology

Habitat for the various wildlife species was determined using Crescent Ranger District (District) occurrence data, habitat descriptions found in scientific literature, various data sets, Forest-wide assessments and

professional experience. USFWS mapped emergent vegetation wetlands was used to determine existing Oregon spotted frog habitat. Water level changes and subsequent habitat development for the Oregon spotted frog was modelled utilizing LIDAR and digital elevation model (DEM) with a Stage 0 model as described in Powers et al 2018. The Viable Ecosystem Model (Viable) was used to determine the live tree component of habitat and formed the basis of acres of existing nesting/denning habitat (Viable Ecosystems Management Guide (Viable model) 1994). Because of Forest Plan standards for cover and thermal cover requiring trees per acre and height, deer and elk habitat was determined using GNN data. For Management Indicator Species (MIS) modeling habitat is described in the document "*FinalWorkingHabitats_27March2012*" which is electronically filed in the Deschutes/Ochoco Wildlife program file. Modeling was based on habitat descriptions summarized in each species' assessment, GNN data and Viable modeling.

GIS Analysis and ArcMap

ArcGIS is a geographic information system (GIS) that integrates hardware, software, and data for capturing, managing, analyzing, and displaying all forms of geographically referenced information. The information can be related to visual data (maps), tabular data (tables, spreadsheets, or data bases), and used to run models (create new data set from existing data based on criteria or specific conditions). ArcMap is a component of the ArcGIS program. The client software developed by Economic and Social Research Institute (ESRI) was used for the processing and presentation of GIS data.

BEST AVAILABLE SCIENCE

This report has considered and applied the best science available; including papers, reports, literature reviews, review citations, peer reviews, science consistency reviews, and results of ground-based observations. Data layers from the Forest Service Geographic Information Systems and various Resource Management data-bases were utilized in the analysis. NatureServe, http://explorer.natureserve.org/index.htm, was often used for population trends and/or species habitat needs. It is an authoritative source of current, comprehensive, quality biodiversity data. Best available science and professional judgment was used to determine the analysis area, species, or habitat presence and effects. A complete list of the science used can be found in the Literature Used and References Cited section of this document.

BIOLOGICAL EVALUATION

BIOLOGICAL EVALUATION FOR PROPOSED, ENDANGERED, THREATENED, AND SENSITIVE ANIMAL SPECIES

Upper Little Deschutes Restoration Project
Crescent Ranger District
Deschutes National Forest

Species Summary

Proposed (P), Threatened (T), Endangered (E) Species	**Alternative A (No Action)**	**Alternative B (Proposed Action)**
Northern spotted owl (*Strix occidentalis*) (T)	NE	NE
Northern spotted owl Critical Habitat	NE	NE
Oregon spotted frog *(Rana pretiosa)* (T)	NE	LLA
Oregon spotted frog Critical Habitat	NE	NLAA
Gray wolf (*Canis lupus*) (E)	NE	NE
North American wolverine *(Gulo gulo)* (P)	NE	NE
Pacific fisher *(Pekania pennanti) (P)*	NE	NE

NE = No Effect;
MEBE = May Effect, likely to Beneficially Effect. (BA must be completed for concurrence on benefits)
NLLA = May Effect, Not likely to Adversely Affect (must also meet PDCs, if not must complete a BA);
NLJ = Not Likely to Jeopardize (Proposed species only)
LLA = Likely to Adversely Affect (BA must be completed and consulted).

R6 Sensitive Species (Federal Candidates for listing*)		
Northern bald eagle *(Haliaeetus leucocephalus)*	NI	NI
Bufflehead *(Bucephala albeola)*	NI	NI
Harlequin *(Histrionicus histrionicus)*	NI	NI
Tricolored blackbird *(Agelaius tricolor)*	NI	NI
Yellow rail *(Coturnicops noveboracensis)*	NI	NI
Greater (Western) sage grouse *(Centrocercus urophasianus phaeios)*	NI	NI
Lewis' woodpecker *(Melanerpes Lewis)*	NI	NI
White-headed woodpecker *(Picoides albolarvatus)*	NI	MIIH
Northern waterthrush *(Parkesia noveboracensis)*	NI	BI
Horned grebe *(Podiceps auritus)*	NI	NI
Tule goose *(Anser albifrons elagasi)*	NI	NI
Sierra Nevada red fox *(Vulpes vulpes necator)*	NI	NI
Townsend's big-eared bat *(Corynorhinus townsendii)*	NI	NI
Pallid bat *(Antrozous pallidus)*	NI	NI
Spotted bat *(Euderma maculatum)*	NI	NI
Fringed myotis *(Myotis thysanodes)*	NI	NI
Columbia spotted frog *(Rana luteiventris)*	NI	NI
Crater Lake tightcoil *(Pristiloma arcticum crateris)*	NI	BI
Shiny tightcoil *(Pristiloma wascoense)*	NI	BI
Dalles Mountainsnail (*Oreohelix variablilis*)	NI	NI
Dalles Hesperian (*Verspericola Columbiana depressus*)	NI	NI
Silver-bordered fritillary *(Boloria selene)*	NI	BI
Western bumblebee *(Bombus occidentalis)*	NI	BI
Morrisoni bumblebee (*Bombus morrisoni*)	NI	BI
Suckley cuckoo bumblebee (*Bombus suckleyi*)	NI	BI

NI = No Impact;
MIIH = May impact individuals or habitat, but will not likely contribute to a trend toward federal listing or loss of viability to the population or species;
BI = Beneficial Impact

I. BIOLOGICAL EVALUATION

This Biological Evaluation (BE) has been prepared in compliance with the requirements of Forest Service Manual (FSM) 2630.3/ FSM 2670-2671, FSM 2672.4, FSM W.O. Amendment 2700-2009-1, and the Endangered Species Act of 1973 (Subpart B: 402.12, Section 7 Consultation, as amended) on actions and programs authorized, funded, or carried out by the Forest Service to assess their potential for effects on Threatened and Endangered species and species Proposed for federal listing (FSM 2670.1). Species classified as sensitive by the Forest Service are to be considered by conducting biological evaluations to determine potential effects of all programs and activities on these species (FSM 2670.32). The BE is a documented review of Forest Service activities in sufficient detail to determine how a proposed action may affect sensitive wildlife species. The document becomes part of the analysis file.

II. SUMMARY OF EVALUATION

Threatened (T), Endangered (E), and Proposed (P) species were analyzed using the July, 2016 USFWS list. Sensitive (S) species were analyzed using the March, 2019 R6 Regional Forester's Sensitive Species list.

This Biological Evaluation is a seven-step process to identify threatened, endangered, and sensitive wildlife species that may be associated with the project, and to evaluate any impacts the project may have to those species. The biological evaluation process for wildlife species which may occur within the project area on the Crescent Ranger District is summarized in TES Table 1. Note Step 6 are mitigation measures to minimize effects. These are not listed in the TES Table 1, but presented in the Mitigation and Design Criteria section of the Introduction of this document. Field surveys were not completed or required for species in this evaluation where the action does not include ground-disturbing activities that may affect the species or their habitat. The analysis area was evaluated for potential habitat and species presence using District wildlife sightings records, District Geographical Information System (GIS) vegetation and habitat data layers, known locations of TES species, and District personnel knowledge of the river corridor. Species specific discussions are included after TES Table 1. All Threatened, Endangered, or Proposed that are present and/or have potential habitat in the analysis area will be further analyzed. Only R6 Sensitive species that are present and/or have potential habitat will be further analyzed.

After a review of wildlife observation records, habitat requirements and habitat conditions present in the analysis area, it was determined the following Threatened, Endangered, Proposed or Region 6 Sensitive wildlife species are **known to occur or have suitable habitat present** in the analysis area: Oregon spotted frog, gray wolf, northern bald eagle, bufflehead, white-headed woodpecker, northern waterthrush, Townsend's big-eared bat, spotted bat, fringed myotis, Crater Lake tightcoil, shiny tightcoil, silver-bordered fritillary, western bumblebee.

The remaining TES species that are **not present** nor have suitable habitat present or in close proximity to the analysis area include: northern spotted owl, wolverine, Pacific fisher, harlequin duck, tricolored blackbird, yellow rail, greater sage grouse, American peregrine falcon, Lewis's woodpecker, horned grebe, Tule goose, Sierra Nevada red fox, pallid bat, Columbia spotted frog, Dalles Mountainsnail, and Dalles Hesperian.

The analysis is based on the description of the project in the INTRODUCTION section of this document and in detail in Chapter 1 and 2 of the EA. The following table, TES Table 1 provides a summary of the Biological Evaluation steps. Note step 6, mitigation measures, are not included in the table but are part of the description of the project and listed in Wildlife Design Criteria and Mitigation Measures in the INTRODUCTION to this document.

TES Table 1. Summary of Biological Evaluation Steps 1-5 and 7 (Step 6[1])

Step 1. Identification of listed, proposed and sensitive species	Step 2. Description of habitat and presence of habitat and/or species		Step 3. Adverse Effect or Conflict	Step 4. Cumulative effects/ Significance	Step 5. Determination and Step 7. Need for consultation of TE and P only
Species to consider	**Habitat Used**	**Species or Habitat present**	**Species or Habitat Affected or Impacted by Project**		
Proposed (P), Threatened (T), Endangered (E) Species					
Northern spotted owl (*Strix occidentalis*) (T) And Critical Habitat	Nesting, roosting, foraging habitat consist of late and old structure, multi-story stands **Project is outside the range of this species**	No	No	None	NE No consultation
Oregon spotted frog (*Rana pretiosa*) (T)	Highly aquatic. Breeding -requires emergent wetlands - sedge fens, riverine over-bank pools beaver ponds. Post-breeding - permanent water within wetland, riverine, and lacustrine habitats. Overwinter - deep ponds, or well oxygenated springs	Yes	Disturbance to potential harm from equipment working in occupied habitat	None	LLA Consultation Required
Critical Habitat Unit 9			Alteration of vegetation and hydrology	None	NLAA Consultation Required
Gray wolf (*Canis lupus*) (E)	Habitat generalist dependent on remote areas with sufficient big game species available year round.	Yes	No	None	NE No consultation
Wolverine (*Gulo gulo*) (P)	Wide variety of habitats, limiting factor is breeding habitat in high-elevation, alpine habitats containing sufficient snow depth during the spring denning period	No	No	None	NE No consultation
Pacific fisher (*Pekania pennanti*) (P)	Dense forest with a coniferous component, large snags or decadent live trees and logs for denning and resting, and complex physical structure near the forest floor to support prey	No	No	None	NE No consultation
R6 Sensitive Species (*Federal Candidates for listing)					
Northern bald eagle *(Haliaeetus leucocephalus*)	Over-mature ponderosa pine or mixed conifer forest for nesting or with roosting in proximity to foraging area consisting of fish-bearing lakes and/or rivers	Yes	Potential Effects	None	NI
Bufflehead (*Bucephala albeola*)	Utilizes tree cavities in dense forest close to lakes and ponds, low gradient rivers	Yes	Potential Effects	None	NI
Harlequin (*Histrionicus histrionicus*)	Nest along fast-flowing rivers and mountain streams	No	No	None	NI
Tricolored blackbird (*Agelaius tricolor*)	Nests in undisturbed fresh-water marshes of cattails, tules, bulrushes and sedge, or in thickets of willows or other shrubs	No	No	None	NI

[1] Step 6 is mitigation measures to minimize effects. They can be found in the Mitigation and Design Criteria section.

Step 1. Identification of listed, proposed and sensitive species	Step 2. Description of habitat and presence of habitat and/or species		Step 3. Adverse Effect or Conflict	Step 4. Cumulative effects/ Significance	Step 5. Determination and Step 7. Need for consultation of TE and P only
Species to consider	**Habitat Used**	**Species or Habitat present**	**Species or Habitat Affected or Impacted by Project**		
Yellow rail (*Coturnicops noveboracensis*)	Nest in marshes or wet meadows with an abundance of sedges and an average water depth of 7 cm.	No	No	None	NI
Greater sage grouse (*Centrocercus urophasianus phaeios*)	Sagebrush communities with a mixture of sagebrush, meadows and aspen.	No	No	None	NI
Lewis's woodpecker (*Melanerpes Lewis*)	Open ponderosa pine habitats or burned ponderosa pine forest created by stand-replacing fires. Require large snags in an advanced stage of decay, or with existing cavities	No	No	None	NI
White-headed woodpecker (*Picoides albolarvatus*)	Open old growth ponderosa pine forest with little shrub cover and a mosaic of denser areas. Two pine species such as ponderosa and sugar pine provide a winter seed source	Yes	Potential Impacts	None	MIIH
Northern waterthrush (*Parkesia noveboracensis*)	Nests in dense riparian thickets of willow, alder, and/or lodgepole pine with a willow component adjacent to slow moving water	Yes	Potential Impacts	None	BI
Horned grebe (*Podiceps auritus*)	Nest in lakes and ponds with tall vegetation or marshy habitats	No	No	None	NI
Tule goose (*Anser albifrons elagasi*)	Marshes and wetland habitats	No	No	None	NI
Sierra Nevada red fox *(Vulpes vulpes necator)*	High elevation, alpine or subalpine forest	No	No	None	NI
Townsend's big-eared bat (*Corynorhinus townsendii*)	Maternity and hibernation takes place in caves and mine tunnels, roosts in cavities in caves, buildings, bridges and mines..	Yes	No	None	NI
Pallid bat (*Antrozous pallidus*)	Found in arid deserts, steppe and grasslands, less frequently in dry open oak or ponderosa forest. Roosts in rock crevices less common in buildings, bridges, caves, live tree and snags.	Yes	No	None	NI
Spotted bat (*Euderma maculatum*)	Rely on caves, cracks, and crevices in tall cliffs for roosting. Foraging is variable from marshes, meadows, riparian to open ponderosa pine.	Yes	No	None	NI
Fringed myotis (*Myotis thysanodes*)	Occur primarily at middle elevations in desert, riparian, grassland, and woodland habitats. Roosts in caves, mines, rock	Yes	No	None	NI

Step 1. Identification of listed, proposed and sensitive species	Step 2. Description of habitat and presence of habitat and/or species		Step 3. Adverse Effect or Conflict	Step 4. Cumulative effects/ Significance	Step 5. Determination and Step 7. Need for consultation of TE and P only
Species to consider	**Habitat Used**	**Species or Habitat present**	**Species or Habitat Affected or Impacted by Project**		
	crevices buildings, bridges and other protected sites. Forage close to the vegetative canopy				
Columbia spotted frog (*Rana luteiventris*)	Similar to Oregon spotted frog require a mosaic of emergent wetlands, permanent water and deeper water **Project is outside the range of this species.**	No	No	None	NI
Crater Lake tightcoil (*Pristiloma arcticum crateris*)	Riparian habitats with permanent surface moisture	Yes	Potential effects	None	BI
Shiny tightcoil (*Pristiloma wascoense)*	Moist microsites primarily under deciduous vegetation, and/or shaded basalt cliff with talus with riparian influence	Yes	Potential effects	None	BI
Dalles Mountainsnail (*Oreohelix variablilis*)	Associated with seeps and springs in the open and dry areas, north-facing large basalt talus	No	No	None	NI
Dalles Hesperian (*Vespericola Columbiana depressus*)	Seeps and Springs	No	No	None	NI
Silver-bordered fritillary (*Boloria selene*)	Suitable habitat consists of mostly wet meadows, marshes, bogs and more open parts of shrubbier wetlands with violet species for the caterpillar stage and nectar sources such as composite flowers for the adult	Yes	Potential effects	None	BI
Western bumblebee (*Bombus occidentalis*)	Areas with a diverse assemblage of native flora such that flowers would be constantly available throughout the active season of April to September	Yes	Potential effects	None	BI
Morrisoni bumblebee (*Bombus morrisoni*)					
Suckley cuckoo bumblebee (*Bombus Suckleyi*)					

Summary Conclusions for Threatened, Endangered, and Proposed Species and Federal Candidates

1. The project is outside the range of the **Northern Spotted owl**, therefore it would have **"No Effect"**, for the northern spotted owl or its critical habitat. Consultation with US Fish and Wildlife Service is not necessary.

2. The project affects vegetation and hydrology in habitat **Oregon spotted frog** currently occupies. It provides a broader connection to the floodplain, completely, partially, and/or seasonally re-connects selected oxbows, re-waters wetlands and provides for retention of water longer into the summer season. All of which would increase the amount and quality of Oregon spotted frog habitat. Pulling dispersed recreation sites out of the riparian, closing unauthorized bridges, trails and roads along with rehabilitating these sights improves habitat and decreases recreational disturbance. However, since equipment would be working in occupied habitat, capture and relocation of frogs during implementation of the project **"May Effect, Likely to Adversely Affect"** Oregon spotted frog in the short term, increasing quantity and quality for a beneficial effect in the long term. The ULDR project does not meet the Programmatic BA Project Design Criteria, as such consultation with US Fish and Wildlife Service is necessary. As of 15 May 2019 consultation with US Fish and Wildlife Service is ongoing. An in depth effects analysis is in progress in a separate Biological Analysis (BA).

3. The project affects vegetation and hydrology within **Oregon spotted frog critical habitat**. It would increase breeding habitat through broader connection to the floodplain, and other primary constituent elements through re-watering of oxbows, creating or deepening existing ponds within the oxbows and ensuring a flow of water to the Odell pasture pond. All of which would increase the amount and quality of Oregon spotted frog habitat. Reducing the number of dispersed recreation sites within the CHU, closing unauthorized bridges, trails and roads along with rehabilitating these sights improves habitat and decreases disturbance. Implementation of the project alters the vegetation and hydrology within the CHU therefore, it **"May Effect, Not Likely to Adversely Affect"** Oregon spotted frog Critical Habitat Unit 9. Consultation with US Fish and Wildlife Service is ongoing and will be completed prior to a signed decision. An in depth effects analysis of the project on critical habitat will be included in the Biological Analysis (BA) for the Oregon spotted frog.

4. **Gray wolves** generally use this area as a travel corridor. There are no current resident wolves on the Crescent Ranger District. The ULDR project alters big game habitat by increasing consolidated blocks of habitat through road closures and obliteration. It also improves foraging habitat along riparian areas increase quality and quantity of forage for big game, contribute to a positive trend in viability of big game on the Deschutes National Forest. Disturbance from implementation would temporarily change how big game use the project area pushing them away from riparian areas during the day. Changes to big game use patterns and disturbance from implementation would be local and minor and would not alter how gray wolf would utilize the project area. Implementation would result in a determination of **"No Effect"** to gray wolf, as such, consultation with US Fish and Wildlife Service is not necessary.

5. **Wolverine** are unlikely to utilize the project area. The ULDR project would not alter use of the area by wolverine. Implementation of the project would result in a determination of **"No Effect"** on the wolverine. As such consultation with US Fish and Wildlife Service is not necessary.

6. **Pacific Fisher** are unlikely to utilize the project area. The ULDR project would not alter use of the area by fisher. Implementation of the project would result in a determination of **"No Effect"** on the Pacific Fisher. As such consultation with US Fish and Wildlife Service is not necessary.

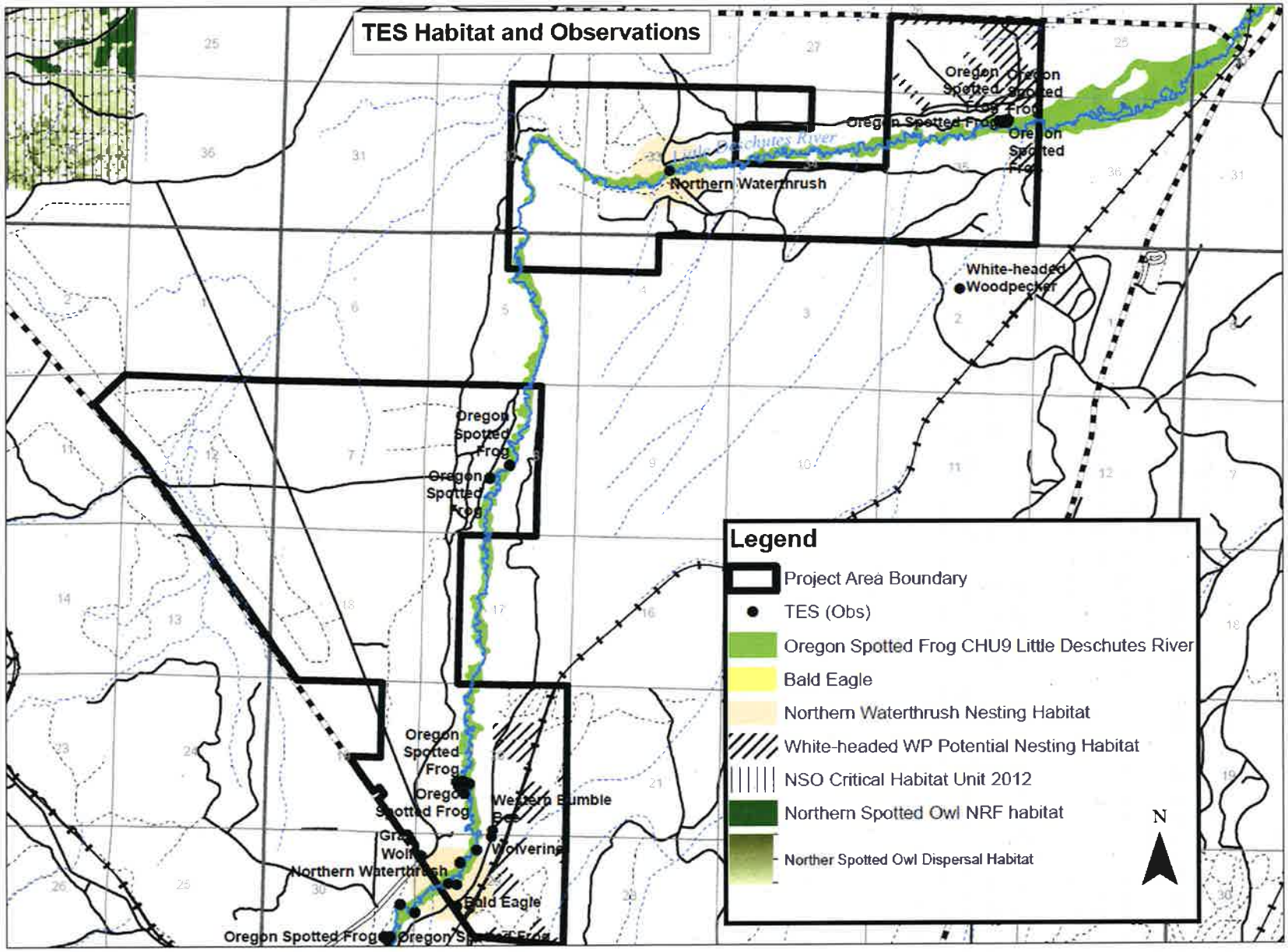
Summary Conclusions for R6 Sensitive Species.
The project would have **"No Impact"** to Sierra Nevada red fox, yellow rail, greater sage grouse, American peregrine falcon, Lewis's woodpecker, horned grebe, Tule goose, Columbia spotted frog, Dalles mountainsnail and Dalles hesperian with the implementation of the proposed project as they are not present nor have habitat within the project area.

There is no maternal or roosting habitat for Townsend's big-eared bat, pallid bat, spotted bat, and fringed myotis potential within the project area. There are no known sightings or detection of these species on the Crescent Ranger District. Since most bats are known to forage in riparian/wetland areas and over water sources there is potential foraging habitat within the project area. Since implementation of the project would occur during the

day and bats forage at night, there no change of how these bats may utilize potential foraging habitat in the project area. Implementation of the project would have **"No Impact"** to Townsend's big-eared bat, pallid bat, spotted bat, or fringed myotis.

With an initial decrease in secondary nesting habitat, from lodgepole removal. Implementation of the ULDR project "**May impact individuals or habitat, but will not likely contribute to a trend toward federal listing or loss of viability to the population or species**" of the northern waterthrush. Over the long term riparian restoration actions would increase willow, and sustainable recreation and transportation would decrease incidental loss and disturbance of occupied and potential habitat within the ULDR project area. These actions would provide a beneficial impact with the potential to increase the population of northern waterthrush and potential willow nesting habitat on the Little Deschutes River.

The ULDR project would increase quality and quantity habitat for the tightcoils, butterflies and bumblebees through increased wetland habitat, hardwoods, diversity of flowering species and a decrease in lost and disturbance of potential habitat. Implementation of the ULDR project would have a **"Beneficial Impact"** to the Crater Lake tightcoil, shiny tightcoil, silver-bordered fritillary, western bumblebee, Morrisoni bumblebee and Suckley's cuckoo bumblebee.



TES Figure 1. TES Locations and Habitat in the Project Area

III. AFFECTED WILDLIFE

Threatened, Endangered, and Proposed Species

Northern Spotted Owl and Critical Habitat, *Federal Threatened, MIS*

The project is outside the range of the northern spotted owl (TES Figure1), therefore it would have **"No Effect"** for the northern spotted owl or its critical habitat.

Oregon Spotted Frog (*Rana pretiosa*) and Critical Habitat, *Federal Threatened*

The Oregon spotted frog was proposed for listing as a threatened species under the Endangered Species Act on August 29, 2013. On August 28, 2014, the USFWS listed the frog as a Threatened species under the Endangered Species Act (Fed. Reg. 2014). Critical Habitat was designated on May 11, 2016. The 2016 Critical Habitat (CHU) rule included designation of approximately 65,038 acres and 20.34 river miles. On the Crescent Ranger District there are two CHUs, CHU 8B and CHU 9. Odell Creek, several miles east of its outlet at Odell Lake, is part of CHU 8B: Upper Deschutes River above Wickiup Dam. Crescent Creek below the dam on Crescent Lake flows into the Little Deschutes River, all of which is part of CHU 9: Little Deschutes River.

A brief summary of Oregon spotted frog life history and Critical Habitat is given below. For more detailed information on the Oregon spotted frog life history, Critical Habitat Units and Recovery see *Federal Register Vol. 78 No. 168 August 29, 2013 p29354 (Fed. Reg. 2016)* and the *Joint Aquatic and Terrestrial Programmatic Biological Assessment for Federal Lands within the Deschutes and John Day River Basin's Administered by the Deschutes and Ochoco National Forest* (2014).

Conditions required for the Oregon spotted frog life cycle include shallow water areas for egg and tadpole survival, perennially deep, moderately vegetated pools for adult and juvenile survival in the dry season, and perennial water for protecting all age classes during cold weather (Watson et al. 2003). The Oregon spotted frog inhabits emergent wetland habitats in forested landscapes, although it is not typically found under forest canopy. This is the most aquatic native frog species in the Pacific Northwest, as all other species have a terrestrial life stage. It is almost always found in or near a perennial body of water, such as a spring, pond, lake, sluggish stream, irrigation canal, or roadside ditch (Federal. Register 2013b).

Primary constituent elements of the physical and biological features necessary for the management and recovery of the species include:

Primary constituent element 1 - Nonbreeding (N), Breeding (B), Rearing (R), and Overwintering Habitat (O). Ephemeral or permanent bodies of fresh water, including, but not limited to natural or manmade ponds, springs, lakes, slow-moving streams, or pools within or oxbows adjacent to streams, canals, and ditches, that have one or more of the following characteristics:

- Inundated for a minimum of 4 months per year (B, R) (timing varies by elevation but may begin as early as February and last as long as September);
- Inundated from October through March (O); • If ephemeral, areas are hydrologically connected by surface water flow to a permanent water body (e.g., pools, springs, ponds, lakes, streams, canals, or ditches) (B, R);
- Shallow water areas (less than or equal to 30 centimeters (12 inches), or water of this depth over vegetation in deeper water (B, R);
- Total surface area with less than 50 percent vegetative cover (N);
- Gradual topographic gradient (less than 3 percent slope) from shallow water toward deeper, permanent water (B, R);
- Herbaceous wetland vegetation (i.e., emergent, submergent, and floating leaved aquatic plants), or vegetation that can structurally mimic emergent wetland vegetation through manipulation (B, R);
- Shallow water areas with high solar exposure or low (short) canopy cover (B, R);
- An absence or low density of nonnative predators (B, R, N)

Primary constituent element 2 - Aquatic movement corridors. Ephemeral or permanent bodies of fresh water that have one or more of the following characteristics:

- Less than or equal to 3.1 miles (5 kilometers) linear distance from breeding areas;

• Impediment free (including, but not limited to, hard barriers such as dams, biological barriers such as abundant predators, or lack of refugia from predators).

Primary constituent element 3 - Refugia habitat. Nonbreeding, breeding, rearing, or overwintering habitat or aquatic movement corridors with habitat characteristics (e.g., dense vegetation and/or an abundance of woody debris) that provide refugia from predators (e.g., nonnative fish or bullfrogs).

Threats to the species' habitat include loss of wetlands; changes in hydrology due to construction of dams; human-related alterations to seasonal flooding, or loss of beaver; changes in vegetation due to succession and encroachment, poor water quality, or livestock grazing (in some circumstances); development most markedly residential and commercial; and predation with the introduction of non-native plant and animal species.

Pre-field Review

There are 4 known Oregon spotted frog sites and 3 known breeding locations associated with oxbows and ponds along the Little Deschutes River within the project area (TES Figure 1). The major cluster of breeding sites occurs upstream of where Forest Service Road 61 crosses the Little Deschutes River, west of Crescent, OR. Egg mass surveys conducted at this location between 2006 and 2017 by USGS and the Forest Service have yielded counts ranging between 11 and 53 egg masses. The high count of 53 egg masses was observed in 2016 during an intensive survey effort. Other sites have lower population levels resulting in 1-11 egg masses. The floodplain areas associated with these breeding sites along the Little Deschutes River consists of primarily willow, with lodgepole pine on the surrounding uplands.

There is approximately 280 acres of CHU 9 within the project area. The USFWS wetlands GIS layer classification of emergent wetlands was used to determine potential Oregon spotted frog habitat. There is approximately 20 acres of emergent wetlands within CHU 9 and a total of 25 acres within the project area. There are three dispersed sites located entirely within the CHU, DS #2, 5, and 17. Fourteen dispersed sites are partially within the CHU. All sites are within riverine, freshwater forested/shrub wetland and/or upland forest. None are currently within mapped freshwater emergent wetland. Refer to TES Table 2.

TES Table 2. Dispersed sites within CHU 9

Site #	Within OSF CHU	Wetland Type
Northern Portion		
DS #1	Partially	Riverine, Freshwater Forested Wetland and Upland Forest
DS #2	Yes	Riverine, Freshwater Forested Wetland
DS #3	Partially	Riverine, Upland Forest
DS #4	Partially	Riverine, Upland Forest
DS #5	Yes	Freshwater Forested Wetland and Upland Forest
DS #6	Partially	Freshwater Forested Wetland and Upland Forest
DS #7	Partially	Freshwater Forested Wetland and Upland Forest
DS #8	No	Upland Forest
DS #9	Partially	Freshwater Forested Wetland and Upland Forest
DS #10	No	Upland Forest
DS #11	Partially	Riverine, Freshwater Forested Wetland and Upland Forest
DS#20	Partially	Freshwater Forested Wetland and Upland Forest
Dump #1	No	Upland Forest
Dump #2	No	Upland Forest
Southern Portion		
DS #12	No	Upland Forest
DS #13	Partially	Riverine, Freshwater Forested Wetland and Upland Forest
DS #14	Partially	Freshwater Forested Wetland and Upland Forest
DS #15	Partially	Freshwater Forested Wetland and Upland Forest
DS #16	Partially	Freshwater Forested Wetland and Upland Forest
DS #17	Yes	Freshwater Forested Wetland
DS #18	Partially	Freshwater Forested Wetland and Upland Forest
DS #19	Partially	Freshwater Forested Wetland and Upland Forest

*Sites were defined by 100 foot buffer from center of site to include full area of disturbance. The campsite itself may be outside of the CHU 9, but a portion of the area of disturbance may be in.

Survey History

Spring visual encounter surveys (TES Table 3) for breeding frogs and egg masses were conducted in 2015 through 2017 using the 2010 protocol by Pearl et al. Not all sites were covered every year. The number of egg masses varied at each site and each year with a low of 0 and high of 53 egg masses, with the highest number at the Odell Pasture location in 2016. Survey data is on file at the Crescent Ranger District.

TES Table 3. Oregon Spotted Frog Breeding Survey Results

Survey Area	Number of Egg Masses (Number of Adults in parenthesis)						
	2012	2013	2014	2015	2016	2017	2018
100 road and Odell Pasture Pond	27	36	4	4	53 (2)	1	13
Little Deschutes Dogleg 1	NA	0	NA	NA	0	NA	NA
Little Deschutes Dogleg 2	NA	0	NA	NA	0	NA	NA
Little Deschutes Dogleg 3	NA	2	NA	NA	23 (12)	17(4)	40 (4)
Total Egg Masses	27	38	4	4	76	18	53
Breeding adults based on 2/egg mass		76			152		106
NA = Not surveyed that year.							

Direct, Indirect, Cumulative Effects and Determination

Alternative A-No Action

Current Oregon spotted frog locations are associated with wetland areas adjacent to the Little Deschutes River, side channels with deep ponds, or ditches and ponds found in Odell Pasture. During dry years these ponds and ditches dry up and frogs retreat to side channels that still contain water or the river. Moving to the river puts Oregon spotted frogs at greater risk of predation.

Vegetative succession over time, without fire, converts wetlands and shrub wetlands to forest. Along the Little Deschutes River, lodgepole pine is currently encroaching into riparian areas and wet meadows. The increased shading from these trees reduces solar radiation in shallow water reducing warm sites required for breeding by Oregon spotted frogs (Pearl 1999). Encroaching lodgepole pine trees will continue to reduce breeding habitat along the Little Deschutes River.

Dispersed recreational sites continue to expand and degrade occupied and potential Oregon spotted frog habitat through vegetation removal, trampling, human presence and camping activities. Sites DS #2, 5, and 17 as well as both unauthorized bridges are within the CHU. Sites DS #1, 3, 4, 6, 7, 9, 11, 13, 14, 15, 16, 18,19 and 20 are partially within the CHU. All recreation sites have trails that lead down to the river, many going through potential Oregon spotted frog habitat. Only DS #2 and trails from DS #9 go through known occupied habitat. Streambanks are broken down and many wet areas are trampled, degrading the function of the CHU. Refer to TES Figure 2.

The current road system provides access to these dispersed sites, from which unauthorized routes proceed to access points to the river. There is evidence of motorized vehicle use within potential frog habitat at the unauthorized bridge site and occupied frog habitat at Odell Pasture. Rutting riparian features such as ponds and wetlands, damages potential habitat for the Oregon spotted frog within the CHU.

Alternative B – Proposed Action

Proposed stream structures consisting of a single logs, multiple logs or beaver dam analog structures would be designed to increase water levels and reconnect historic wetland, oxbows and side channels to the river and/or provide a base from which beavers could establish a dam. Increased water levels would increase all life cycle habitats (breeding, summer and overwinter) for Oregon spotted frog.

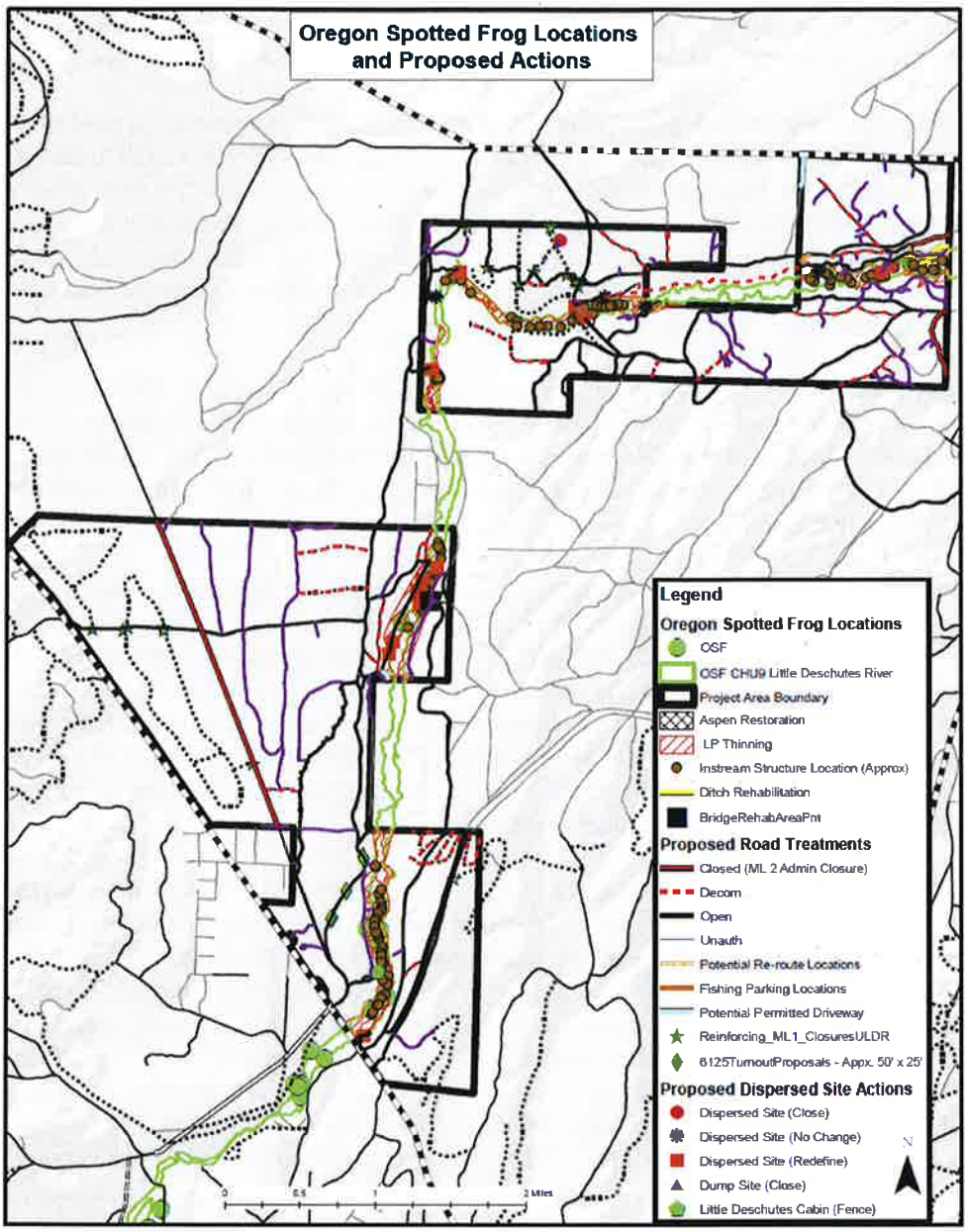
Structures increasing water in side channels or oxbows would vary depending availability of materials, access for equipment and habitat that it currently provides. Different strategies and structures used on the side channels and oxbows created different habitats. Where habitat already exists no changes would be made; where ponds exist a structure to divert at high flows would provide aquatic connectivity to that site. In side channels or oxbows where ponds are not already existing, excavating ponds would provide rearing, nonbreeding, summer and overwintering habitat. Not all oxbows or side channels would be altered. Breeding habitat would increase where structures are placed along the edges of the side channels, oxbows and the floodplain during high and low flow years. Across the project area water levels would be retained longer increasing the length of time rearing habitat is available; potentially increasing survival of tadpoles and juveniles.

Side channels that become connected year round would provide Oregon spotted frog summer/winter habitat that fish would also have access to. While frogs would utilize this habitat, the presence of fish may be a deterrent to establishing a large population at that site. Configurations of shallow habitat with hiding cover would decrease predation at these sites. Side channels connected only during high flow would be less likely to retain fish when water levels dropped and frogs would be more likely to become established. Willow and sedge planting in the restored areas would provide hiding cover for the frog.

Oregon spotted frogs currently occupy several sites where equipment would be working at Odell Pasture. Sites include the unauthorized water diversion ditch, a historic pond and a small wetland areas adjacent to the Little Deschutes River (TES Figure 2). While efforts to relocate the frogs during the restoration process would take place, there would be potential that not all frogs would be found. Actions from the disturbance and relocation has the potential to harm and/or kill frogs. To minimize the number of frogs harmed, work would be completed during the driest conditions possible, generally after August 1.

Project-wide increased water elevations to historic levels would increase all life cycle habitats (breeding, rearing, summer and overwinter) within the CHU 9 for Oregon spotted frog. Increases include approximately 12 acres of breeding habitat; 8 acres of breeding/rearing habitat; 6 acres of non-breeding/wintering habitat and 4 acres of wintering habitat. Spring runoff in normal water years create additional breeding habitat within the floodplain. With the return to normal water elevations, breeding habitat created by typical spring runoff may expand further into the floodplain. Post implementation, water levels decrease to summer base flows there would be an increase of approximately 30 acres of life cycle habitats.

All instream structure placement and unauthorized bridge removals takes place within the CHU 9. Areas of impact includes a 300 ft. buffer around each location where structures would be placed. This buffer includes the maximum distance lodgepole pine would be transported and multiple structures created within a given location. The impact buffer over estimates total acres, as most sites may have sufficient material within the first 50-150 feet. Alteration of the CHU with these actions would occur on approximately 195 acres. While this would be approximately 70% of the Critical Habitat within the project area, it would be 5% of CHU 9 on the Crescent Ranger District and 2% of the 11,367 acre CHU 9. Impacts would be short term and include equipment movement crushing vegetation, uprooting trees, disturbance of soil, people trampling of vegetation, and transport of trees for structure by equipment and/or people.



TES Figure 2. Oregon spotted frog locations in relation to dispersed sites and proposed restoration.

There are approximately 244 acres of lodgepole pine removal proposed in stringer meadows and aspen stands. Of this approximately 125 acres are within CHU 9. Within the CHU, treatments occur within approximately 17 acres of emergent wetlands, 106 acres of shrub/forested wetlands and two acres within the uplands. Lodgepole pine removal in these areas would ensure there is sufficient solar radiation to warm the waters for breeding, improving 17 acres of existing breeding habitat and potentially converting 106 acres of shrub/forested wetland to emergent or shrub wetlands thereby increasing breeding habitat. High flows already exceed bank levels during good water years. This project would retain water longer into the summer providing for all life stages. Overall results consist of increasing complexity of side channels, ponds, wetlands and meadows within the project area.

Lodgepole pine removal with piling and subsequent burning would be completed when sites are dry or after August 1st to minimize Oregon spotted frog exposure to activities. There is proposed lodgepole pine removal in and/or adjacent to all occupied sites, but impacts would be minimal. As seen in the implementation of Big

Marsh restoration, contract thinning crews avoid walking in standing water, and generally walk in single file to and from the work sites along the same route. Disturbance of OSF would be minimal, and short term if at all.

Defining the limits of 14 sites through bouldering, bollards, logs and/or revegetating, would reduce the footprint of dispersed campsites away from the riparian vegetation and the river. Structures used to define sites would be outside of riparian vegetation. Restoration work at these sites would occur when the sites are dry, or at their driest in August/September when frogs are not present. If planting of native vegetation is necessary it would take place in the spring and may cause disturbance to Oregon spotted frog individuals in adjacent habitat. These actions along with planned visitor education and monitoring would decrease impacts of vegetation removal, sedimentation, and disturbance to Oregon spotted frog habitat.

Untreated dispersed campsites #3 and #4 disturbance areas would remain partially within the CHU 9, but are not currently in, or adjacent to Oregon spotted frog habitat. Reducing the size of the 14 dispersed campsites would remove 10 disturbance areas out of the CHU and restore habitat. DS #2, #5 and #17 would still be within the CHU, but with a reduced footprint. DS #1 is outside the CHU, but the site disturbance area would continue to overlap the CHU and an occupied site.

None of the dispersed campsites would be completely closed and rehabilitated, but access and resource impacts would be reduced. All sites would be monitored to determine if resource damage was reoccurring and actions, as previously mentioned, would be taken to mitigate impacts. Retaining/planting willows and sedges within shallow/seasonally inundated areas would provide escape habitat for all life stages. A vegetative buffer would develop between disperse sites, the river and associated wet areas. Sources of sedimentation and vegetative damage of Oregon spotted frog habitat would be limited to fishing footpaths adjacent to the river. Increased water levels from riparian restoration actions could alter recreational use around dispersed sites closest to the river as well as develop habitat in or adjacent to them.

The proposed action decommissions approximately 232 ft. of unauthorized routes from sites DS #1, #2 and #14, making them walk in only sites. There would be an additional 1.25 miles of road within 100 feet of the CHU 9 that would also be decommissioned, reducing access to the CHU. Decommissioned routes may temporarily increase sedimentation into the meadow from runoff until vegetation has reestablished. Route decommissioning and/or rehabilitation would reduce motorized access to the CHU and potential Oregon spotted frog habitat. There would remain approximately 0.9 miles of road opened within 100 feet of the CHU. Within the CHU there would be no open roads. Equipment adding drainage or stabilizing slopes within or adjacent to the riparian area would occur when conditions are dry. No frogs would be in or adjacent to the work area. If planting is needed the work would be completed in the spring, potentially resulting in disturbance to Oregon spotted frog within the planting area.

Future user created roads would be rehabilitated as they are found utilizing the same methods described in the proposed action. Impacts of recreation to the CHU and Oregon spotted frog habitat would be reduced through monitoring and reacting to recreational encroachment in an expedited manner.

Cumulative Effects

Overlapping past actions that are taken into account in existing condition. There are no ongoing or future projects that overlap time and space with the proposed project that would impact Oregon spotted frogs or their habitat. There would be no cumulative effects.

Conclusion and Determination

The primary results of the proposed project would alter vegetation and water levels. The raised water level and vegetation changes would improve Oregon spotted frog breeding habitat by increasing solar radiation to existing breeding habitat and increasing the amount of freshwater emergent vegetation wetlands. The project would also increase complexity of the river through additional wetted side channels, ponds, and wetlands. Overall increasing life cycle habitat by 30 acres providing for all life stages throughout the 280 acres of CHU, would increase the functionality of this portion of the CHU. While closing roads and reducing the size of recreation

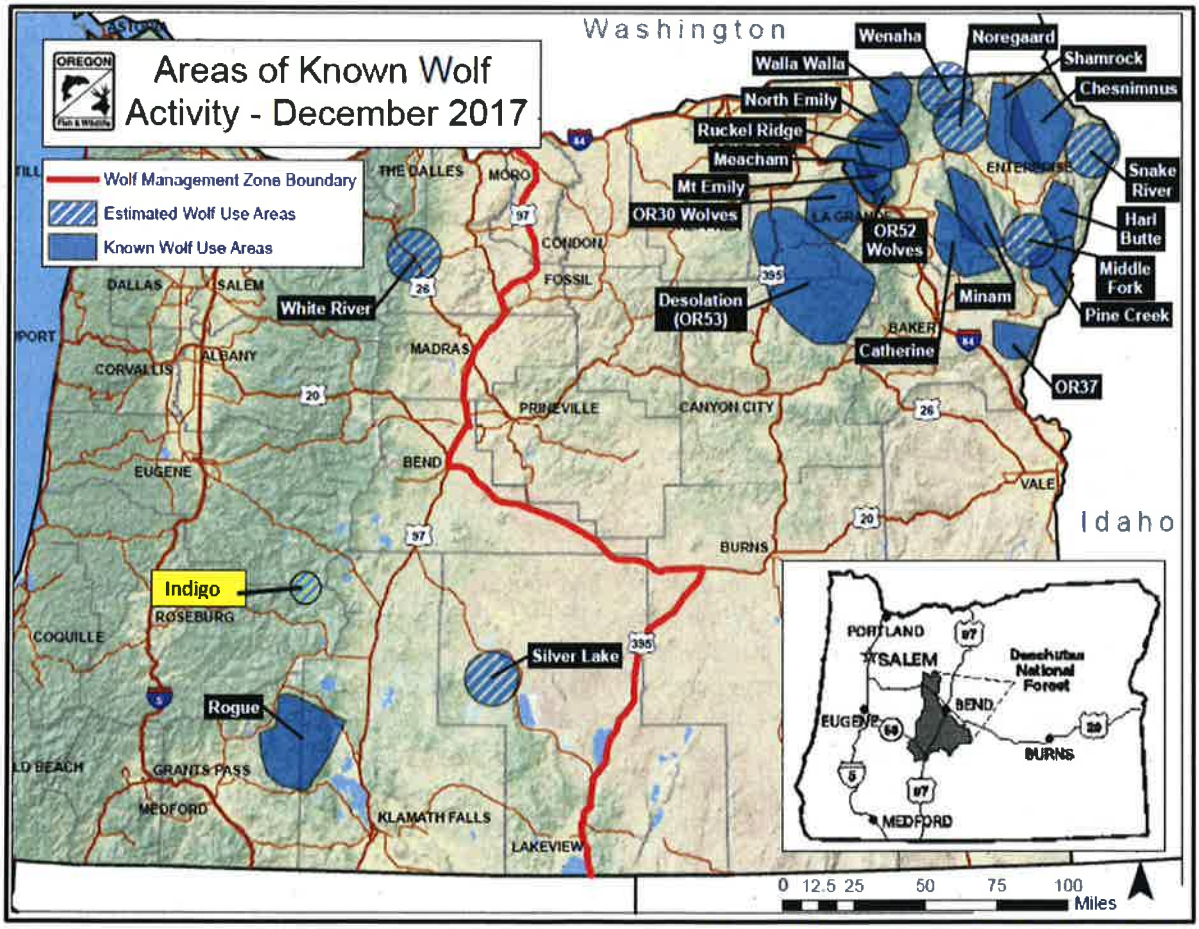
sites would decrease impacts to habitat, disturbance would likely continue as access by non-motorized means is not restricted.

The physical implementation of the project, through equipment operation in occupied habitat, would harm some Oregon spotted frogs through disturbance, injury or death. The project determination is **"May Effect Likely to Adversely Affect"** the Oregon spotted frog during implementation and provide beneficial effects with increases in quantity and quality of habitat. The project "**May Effect Not Likely to Adversely Affect**" the CHU 9 through alteration of vegetation and hydrology. Over the long term the project would increase life cycle habitats increasing the CHU's ability to provide for the Oregon spotted frog.

A more in-depth biological analysis for the Oregon spotted frog is being completed for consultation. Consultation is currently on going.

Gray Wolf (*Canis lupis*), *Federal Endangered*

Gray wolves were protected by the Endangered Species Act of 1973 when only a few hundred remained in extreme northeastern Minnesota and a small number on Isle Royale, Michigan. They were listed as Endangered in the contiguous 48 states except in Minnesota where they were listed as Threatened. Gray wolves were reintroduced into Yellowstone National Park and U.S. Forest Service lands in central Idaho in 1995 and 1996. The reintroduction has been successful and recovery goals for this population have been exceeded with wolves now populating areas outside the reintroduction zone, including packs in eastern and southern Oregon. According to the ODFW website (http://www.dfw.state.or.us/wolves), as of March 27, 2019, there are no Areas of Known Wolf Activity (AKWAs) designated on the Deschutes National Forest. **See TES Figure 3.**



TES Figure 3. Areas of Known Wolf Activity from ODFW website: https://dfw.state.or.us/Wolves/population.asp

(Accessed March 27, 2019. Indigo wolves AKWA and inset for the location of the Deschutes Nation Forest boundary was added)

In areas where wolves are under Federal ESA protection, such as the Deschutes National Forest, wolf occupation is determined through the following criteria from USFWS APHIS:

Area of confirmed presence of resident breeding packs or pairs of wolves or area consistently used by ≥ 1 resident wolf or wolves over a period of at least 1 month. Confirmation of wolf presence is to be made or corroborated by the U.S. Fish and Wildlife Service. Exact delineation of area will be described as:

(1) 5-mile radius around all locations of wolves and wolf sign confirmed as described above (non-radio monitored),

(2) 5-mile radius around radio locations of resident wolves when < 20 radio locations are available (for radio monitored wolves only), or

(3) 3-mile radius around the convex polygon developed from ≥20 radio locations of a pack, pair, or single wolf taken over a period of > 6 months (for radio monitored wolves).

Gray wolves form packs consisting of a breeding pair, their offspring, and other non-breeding adults. Packs defend territories ranging from 50 to 1,000 square miles depending on available prey, with deer and elk being important prey species. Lone, dispersing wolves often pair up with other unattached wolves to establish new packs and territories.

The Northern Rocky Mountain Wolf Recovery Plan (USFWS 1987) list three key components of wolf habitat as: "(1) a sufficient, year-round prey base of ungulates (big game) and alternate prey, (2) suitable and somewhat secluded denning and rendezvous sites, and (3) sufficient space with minimal exposure to humans."

Pre-field Review

Several wolves have been known to travel through the Crescent Ranger District. In 2011, OR7 was the first documented wolf on the Deschutes National Forest. This wolf established the Rogue pack south of the forest boundary. Another wolf, a female (OR3), traveled through and at one time was utilizing Walker Mountain located on the southeast side of the Crescent District as part of its use area. OR3 paired with OR28 and produced at least one pup in the summer of 2016. On October 6, 2016 OR28 was found dead near Summer Lake. They were using the Silver Lake Wildlife Management Unit in western Lake County and have been named the Silver Lake wolves. According to the ODFW website April 12, 2018 post, one wolf was documented in the area during the 2017 winter count. OR33, a male wolf, was also known to travel through the Crescent Ranger District. OR33's radio collar failed in August 2016. In October of 2017, OR33 was found dead on the Fremont-Winema National Forest. A new Area of Known Wolf Activity (AKWA) has been designated by ODFW in their March 21, 2019 update. The AKWA is located in the southern portion of the Indigo Unit in Douglas and Lane Counties, approximately 1 mile west of the Crescent Ranger District's western most border, and approximately 16 miles west of the project area. According to the ODFW website wolf activity has been reported by the public in this area for several years and biologists found tracks of multiple wolves. Currently there is little information about this new group.

Key habitat components within the project area are not favorable to wolves. The project area provides summer range for big game, but not winter range. While some deer and elk may winter on adjacent private land, most deer move east to winter range in October and November. Elk move out once snow levels reach depths that force them to relocate to wintering habitat generally to the east. Most of the project area is adjacent to private land that is currently broken up in multiple housing areas and private timberland. The project area, adjacent private lands and National Forest lands do not provide secluded denning and rendezvous sites or sufficient space with minimal exposure to humans. The area may be suitable for a portion of a territory, but not large or secluded enough for occupancy by itself. The most likely use of the area would be summer foraging for dispersing wolves.

According to personal communications with USFWS (August 2018) there are continued sightings across the forest, but currently no confirmed resident wolves on the Deschutes National Forest or Crescent Ranger District. The Rouge pack remains the closest established wolf pack to the Crescent Ranger District.

Survey History

Carnivore surveys were not conducted specifically for this project. Surveys were not needed to assess the potential effects of this project. Carnivore camera surveys have been conducted on the Crescent Ranger District most recently in Ringo project area to the north and west of the ULDR project area. Surveys in this area from 2014 through 2016 did not detect wolves. There are documented and undocumented sightings of individual wolves in the ULDR project area. Wolves continue to disperse through the Crescent Ranger District often using river corridors.

Direct, Indirect, Cumulative Effects and Determination

Alternative A-No Action

Wolves are closely associated with big game, their main prey animals. Big game use of the project area occurs year round only in low snow years and generally 6-8 months of spring through fall in high snow years. Use areas by big game generally focus on secure blocks of habitat with little road access. With the current road density and configuration, there are only 2 blocks of habitat greater than 100 acres in the project area. Refer to the big game section for the Core Habitat Blocks analysis. There would be no alteration of use by big game with this alternative.

Public use of the project area occurs year round with snowmobiles in the winter and dispersed recreation the rest of the year. The bulk of the project area is bordered by private lands. There would be no change in use of the project area by the public. The level of current human use may discourage wolves from staying and establishing a territory.

Alternative B – Proposed Action

Stream restoration and lodgepole pine removal would increase foraging opportunities for big game within restored wet and dry meadows along the river. This has the potential to increase prey for wolves. Disturbance during restoration activities may cause big game to temporarily avoid the local areas. However, because the project is localized they would likely return in the evenings when activity stopped. Wolves following prey may also follow the same pattern if present during implementation.

Alteration of the current road system would increase the number of large blocks of land (greater than 100 acres) without road access and provide more security habitat for big game, refer to the big game section for the Core Habitat Blocks analysis. Because wolves have a very large territory, the project area alone would not be able to sustain wolves without them utilizing adjacent private and National Forest Lands. While larger blocks of land without road access would benefit big game, it is unlikely to be a large enough area to benefit wolves.

Disturbance from implementation would temporarily change how big game use the project area pushing them away from riparian areas during the day. Changes to big game use patterns and disturbance from implementation would be local to specific areas at any given time and minor day to day. These minor changes in big game use patterns would not alter how gray wolf would utilize the project area since their use area are so large.

Cumulative Effects

With no overlapping projects that would impact wolves there are no cumulative effects.

Conclusion and Determination

There are no known confirmed resident wolves (USFWS August, 2018) within the project area. Current levels of human activity may already preclude wolves from staying in the area. During implementation, disturbance from equipment in and around the project area could move big game away from work locations. These effects to big game are localized and would not alter how the gray wolf utilize the project area. Implementation would

result in a determination of **"No Effect"** to gray wolf, as such, consultation with US Fish and Wildlife Service is not necessary.

Wolverine *Federal Proposed Threatened, Regional Forester Sensitive, MIS*

August 12, 2014 the wolverine (*Gulo gulo*) was no longer a federal candidate for threatened species listing under the Endangered Species Act. The US Fish and Wildlife Service (USFWS) stated, "*Using the best-available science, the U.S. Fish and Wildlife Service has determined the North American wolverine should not be listed as a threatened species under the Endangered Species Act (ESA)*" (USFW 2014). In a published letter July 15, 2016, the USFWS proposed to list the North American wolverine as threatened under the Endangered Species Act (ESA). The USFWS stated the reason for proposed wolverine listing was because, "*The U.S. District Court for the District of Montana ordered the FWS on April 4, 2016, to reconsider whether to list the wolverine as a threatened species.*" The North American wolverine was listed on the Forest Service Region 6 Sensitive Species List (USDA 2011) and also designated as a Management Indicator Species for the Deschutes National Forest (USDA 1990). NatureServe (2017) gives them a state ranking of "critically imperiled".

Wolverines occupy a wide variety of habitats from the arctic tundra to coniferous forest. The most common habitats are those that contain a high diversity of microhabitats and high prey populations. Copeland (2007) described wolverine habitat in the contiguous United States as consisting of small, isolated "islands" of high-elevation, alpine habitats containing sufficient snow depth during the denning period, separated from each other by low valleys of unsuitable habitats. Wolverines occupy habitat in a high elevation band from 6,888 feet to 8,528 feet in the mountains of the lower 48 states (Federal Register/ Vol. 73, No. 48/ Tuesday, March 11, 2008).

Home ranges for adult wolverines tend to be large- ranging from 38.5 square miles to 348 square miles (Banci 1994 in Federal Register Doc. 03-26475). Copeland (1996) radio collared wolverines in Idaho and reported annual home ranges of resident adult females averaged 148 square miles and an average of 588 square miles for resident adult males. Aubry et al. (2007) compiled verifiable and documented records of wolverine occurrences and suggest that the historical distribution of wolverines in the Cascade Mountains and Sierra Nevada was disjunct, contradicting previous interpretations. Aubrey et al. (2007) found no current records in Oregon.

The most critical and limiting habitat for wolverines seems to be acceptable natal denning habitat. Magoun and Copeland (1998) believe that a critical feature of wolverine denning habitat is the dependability of deep snow to persist through the denning period of February through May with at least one meter of snow depth.

Pre-field Review

Wolverine denning habitat for the Deschutes National Forest was modeled using alpine dry, alpine meadow, glacier and rock talus lands with aspects of 120 to 320 degrees and clipped to areas above 5,500 feet. A total of 1,664 acres were mapped, generally in small, disjunct areas extending from Tolo Mountain at the south end of the Crescent District northward including areas on Cowhorn Mountain, Diamond Peak, Paulina Peak, Broken Top, South Sister, Middle Sister, North Sister, Black Crater, Mt. Washington, Three Finger Jack, and Mt. Jefferson. There is no suitable denning habitat for wolverine in the project area. There are no confirmed records of sightings of wolverine in the project area. There is one unconfirmed observation in the southern portion near highway 58 (TES Figure 1). Because rural subdivisions surround or on at least 2 sides of the project area, it is unlikely wolverine would utilize it. Long distance dispersal may be a potential use of the project area by wolverine.

Survey History

No surveys were conducted for this project. Surveys were not needed to assess the potential effects of this project.

Direct, Indirect, Cumulative Effects and Determination

There is no denning habitat within the project area for wolverine. Implementation of the project would not alter any potential use of the area by wolverine. There would be no direct, indirect or cumulative effects on

wolverine. The ULDR project would have **"No Effect"** on wolverine and would not contribute to any change in population trend in viability on the Deschutes National Forest.

Pacific Fisher *Federal Proposed Threatened, Regional Forester Sensitive*

The U.S. Fish and Wildlife Service (USFWS) was issued a court order in April 2003 to conduct a 90-day finding on a petition to list a distinct population segment of the fisher. In July 2003, the USFWS published a 90-day finding that substantiated a listing may be warranted and began a 12 month status review. In April 2004, the USFWS determined the fisher in Washington, Oregon, and California is a "distinct population segment" (DPS) of the entire fisher species (*Pekania pennanti*). The USFWS determined the fisher faces significant biological threats sufficient to warrant listing but is precluded by other higher priority listing actions (Federal Register Vol. 69, No. 68). On October 7, 2014, the USFWS changed the candidate status to propose threatened for the West Coast DPS of fisher (*Pekania pennanti*) (Fed. Reg. 2014c). At the time of the 2014 proposed listing, the USFWS found the designation of critical habitat for fisher to be "not determinable" (Fed. Reg. 2014c). On April 14, 2016 the USFWS issued its finding that the pacific fisher west coast distinct population segment does not require the protection (USFW 2018). The fisher remained on the R6 Sensitive list until September 2018 when a federal judge rescinded USFWS 2016 decision to deny the fisher protection status and ordered the agency to issue a new finding by Marsh 22, 2019. NatureServe (2018) gives them a state ranking of "critically imperiled".

The fisher is a house-cat sized member of the Mustelidae family which includes weasels, mink, marten, and otters. Their occurrence is closely associated with low- to mid-elevation forests (generally less than 4,101 ft. [1,250 m]) with a coniferous component, large snags or decadent live trees, and logs for denning and resting, and complex physical structure near the forest floor to support adequate prey populations (Powell and Zielinski 1994). Major prey species include small to medium sized mammals, bobcat, birds, and carrion. Porcupine are the best known prey species but fisher also prey on snowshoe hare, squirrels, mice and shrews (Powell and Zielinski 1994).

Fisher populations are considered to be extremely low in Oregon, Washington, and parts of the Rocky Mountains. Gibilisco (1994) described the presumed historical range of fishers including lands within the state of Oregon. The eastern extent included the eastern portion of the Cascade Range to Bend and southward to Paulina Peak, Walker Rim, and lands in the Fremont-Winema National Forests. In Oregon, the fisher has been extirpated from all but two portions of its historical range (Aubry and Lewis 2003); in the southwestern portion of the state, one in the southern Cascade Range was established through reintroductions of fishers from British Columbia and Minnesota that occurred between 1961 and 1981, and one in the northern Siskiyou Mountains of southwestern Oregon presumed to be an extension of the population in northern California.

Pre-field Review

There are no known population of Pacific fisher on the Deschutes National Forest. The closest population to the project area is approximately 50 miles to the southwest on the Rogue River-Siskiyou National Forest. The Fed. Reg. 2014c identifies this population as a reintroduced population, Southern Oregon Cascades (SOC) Reintroduced Population. There are no documented occurrences of fisher within the project area. However, there is one 1999 documented occurrence of a radio collared dispersing male fisher from this population within the Big Marsh area. The closest current detection was March 2014 in Paddy's Valley on the Willamette National Forest, approximately 14 miles away from the project border.

There is no potential denning habitat for the fisher within the project area. The most likely use of the project area by fisher would be dispersal.

Survey History

No surveys were conducted for this project. Surveys were not needed to assess the potential effects of this project.

Direct, Indirect, Cumulative Effects and Determination
There is no denning habitat within the project area for fisher. Implementation of the project would not alter any potential dispersal of fisher through the project area. There would be no direct, indirect or cumulative effects on fisher. The ULDR project would have **"No Effect"** on Pacific fisher.

Sensitive Wildlife Species

Within the analysis areas there is potential habitat for the following Region 6 Sensitive Species: northern bald eagle, bufflehead, white-headed woodpecker, northern waterthrush, Crater Lake tightcoil, shiny tightcoil, silver-bordered fritillary, western bumblebee, Morrisoni bumblebee and Suckley cuckoo bumblebee.

Northern Bald Eagle, ***Regional Forester Sensitive, MIS***
The northern bald eagle was officially de-listed as a federal threatened species on August 8, 2007. The Federal Register (Vol. 72, No. 130/Monday July 30, 2007) stated the bald eagle has made a dramatic resurgence from the brink of extinction. While the bald eagle has been de-listed they are still protected under the Bald and Golden Eagle Protection Act of 1940. This law provides for the protection of bald and golden eagles by prohibiting the take, possession, sale, purchase, barter, offer to sell, transport, export or import, of any bald or golden eagle, dead or alive, including any part, nest, or egg, unless allowed by permit (16 U.S.C. 668(a); 50 CFR 22). NatureServe (2017) lists the Oregon status as "apparently secure"[2].

Bald eagle nesting territories are normally associated with lakes, reservoirs, or rivers. Nests are usually located in large conifers in uneven-aged, multi-storied stands with old-growth components (Anthony et al. 1982). Nest trees usually provide an unobstructed view of the associated body of water. Live, mature trees with deformed tops are often selected for nesting. East of the Cascade Mountains in Oregon, bald eagles prefer nesting in ponderosa pine trees that average 46 inches in diameter (range 21-76 inches DBH) and tend to be larger than the surrounding trees (Anthony et al. 1982).

The northern bald eagle was selected as a MIS for the Deschutes National Forest. Certain river or lake locations on the Forest are extremely important as feeding sites during the reproductive, fall and winter periods. Most bald eagles are sensitive to human disturbance during these time periods. Over-mature ponderosa pine or mixed conifer forest is preferentially selected for nesting or winter-roosting habitat.

Prefield Review
There are currently 17 bald eagle nesting territories on the Crescent Ranger District. All known nests on national forest lands on the Crescent Ranger District are associated with Odell Lake, Crescent Lake, Davis Lake, and Wickiup Reservoir. The nearest nest to the project area is located on private land approximately one to two miles away from the northern and southern sections of the project area respectively. It is suspected this pair utilizes Davis Lake and the Little Deschutes River for foraging including the large privately owned meadows near the junction of Highway 97 and Forest Service Road 61. Bald eagle observations occur within the river corridor. Foraging and dispersal would be the most likely use of the project area by bald eagles.

Survey History
Surveys for bald eagles on the Crescent Ranger District focus on the lakes. Nests on private lands are not monitored. No surveys were conducted specifically for this project. Surveys were not needed to assess the potential effects of this project.

Direct, Indirect, Cumulative Effects and Determination
Alternative A-No Action
There would be no change in habitat or use of the area for bald eagles. Large trees with views of the river exist in many of the dispersed sites. Recreational activity levels could make these trees unsuitable for nesting.

Alternative B – Proposed Action

[2] See MIS Table 1 for definitions of NatureServe status

Riparian restoration efforts would remove trees to create stream structures. Because no trees over 21 inches DBH would be removed, there would be no removal of potential nest, roost or perch trees. Instream projects, once completed, would improve water quality and habitat for fish, having the potential to increase the prey base for eagles utilizing this stream system.

Decommissioning of unauthorized roads and trails would reduce the number of motorized access points to the river, which may discourage some recreationists from using the area. There is no indication that there would be a change in current levels of recreation.

With no overlapping projects that would impact eagles there would be no cumulative effects. Implementation of the ULDR project would have **"No Impact"** to the northern bald eagle with the potential for increased prey base. The project would not contribute to a negative trend in viability on the Deschutes National Forest.

Bufflehead, ***Regional Forester Sensitive, MIS***

The bufflehead is North America's smallest diving duck. It winters throughout Oregon, but is an uncommon breeder in the central and southern Cascades (Marshall 2003). Known nest sites in central and southern Oregon include Hosmer Lake, Crane Prairie Reservoir, Twin Lakes, Wickiup Reservoir, Davis Lake and along the Little Deschutes River in Deschutes County.

The bufflehead will use tree cavities or artificial nest boxes in trees close to water. Marshall (1996) stated that human disturbance from high recreation use at Cascade Lakes and a shortage of suitable nesting cavities due to forestry practices may be having an impact on their population status. This duck eats both animal and plant material. During the breeding season, aquatic insects and larvae are the most important item in their diet. They also eat seeds of pondweeds and bulrushes (Csuti et al. 1997).

The bufflehead was designated as MIS under the Deschutes LRMP due to its popularity for hunting and viewing. The Oregon breeding population is considered sensitive by the ODFW because of its small size and limited nesting habitat (Marshall et al. 2003). NatureServe (2017) lists the Oregon status as "imperiled breeding/secure non-breeding".

Pre-field Review

There are no known sightings of buffleheads in the project area. Nesting habitat exists in small patches throughout the project area.

Survey History

No surveys were conducted for this project. Surveys were not needed to assess the potential effects of this project.

Direct, Indirect, Cumulative Effects and Determination

Alternative A-No Action

There would be no change to habitat elements for the bufflehead. Species react differently to recreation and current levels of activity near potential nesting habitat may preclude use by buffleheads.

Alternative B – Proposed Action

Improving water quality and diversity of wetland habitats along the Little Deschutes River could increase foraging habitat for the bufflehead. Although trees would be removed for stream structures and lodgepole pine removed from meadows, there would be no nest sized trees or snags removed. Implementation would take place in late summer or early fall, after nesting season.

Actions for Sustainable Transportation decreases off-highway motorized vehicle (OHV) use along the river. These actions have the potential to decrease disturbance to potential nesting habitat. Reducing the size of a

dispersed site and pulling sites away from the riparian area, would not be sufficient to increase use of these areas by buffleheads.

There are no overlapping projects that would impact buffleheads so there would be no cumulative effects.

While there is the potential of increased foraging habitat and undisturbed nesting habitat. It is unknown if there would be sufficient increase to be a benefit to the bufflehead. Implementation of the ULDR project would have **"No Impact"** to the bufflehead. The project would not contribute to a negative trend in viability on the Deschutes National Forest.

White-headed Woodpecker, *Regional Forester Sensitive, MIS*

White-headed woodpeckers are also considered a management indicator species (MIS) for the Deschutes National Forest as well as a migratory bird focal species. White-headed woodpeckers are uncommon permanent residents in forests east of the Cascades. They occur primarily in open forest with large ponderosa pine (dead and alive), low shrub levels, and large snags (Marshall et al. 2003). The white-headed woodpeckers favor large diameter ponderosa pine for nesting and foraging (Latif et al. 2015). Larger diameter ponderosa and sugar pine trees provide bark crevices for the invertebrate prey of white-headed woodpeckers and are also good cone producers. During the winter months white-headed woodpeckers rely on seeds from ponderosa pine, sugar pine, white pine and/or lodgepole pine. Old-growth stands also have greater densities of the large-diameter snags that white-headed woodpeckers appear to select for nesting (Frenzel 2002). The woodpecker is also known for utilizing large stumps and smaller diameter snags (Frenzel 2002). For Oregon, NatureServe (2017) lists them as "imperiled" to "vulnerable" with moderate to high risk of extinction or elimination due to very restricted range, very few populations and general decline in the population.

Prefield Review

There is approximately 325 acres of potential white-headed woodpecker nesting habitat within the ULDR project area (TES Figure 1). There is also foraging habitat available. There are no observations for white-headed woodpecker within the project area. There are unconfirmed observations outside of the project area.

Survey History

Surveys were not conducted for this analysis. Surveys were not needed to assess the potential effects of this project.

Direct, Indirect, Cumulative Effects and Determination

Alternative A-No Action

There would be continued change in white-headed woodpecker nesting habitat adjacent to roads. While unauthorized roads traverse through nesting habitat for the white-headed woodpecker, woodpeckers are not usually disturbed by motorized use. Existing roadside firewood currently overlap approximately 51 acres reducing snags under 21 inches DBH. People cutting and gathering firewood would cause disturbance to white-headed woodpeckers during the firewood cutting period. Disturbance and reduction of this secondary nesting structure in 51 acres of white-headed woodpecker nesting habitat along open roads would continue with this alternative.

Alternative B – Proposed Action

Habitat for the white-headed woodpecker is in the uplands away from the riparian restoration actions. There are no dispersed recreation sites within nesting habitat. Changes in the open roads alters roadside firewood cutting areas. Closing roads closes approximately 15 acres within potential nesting habitat to future firewood cutting. Opening roads opens approximately 26 acres for firewood cutting not previously opened. While snags under 21 inches DBH that may provide secondary nesting structures for the white-headed woodpecker have already been removed on 15 acres of roadside firewood, this acreage would not be available in the future. The 26 acres opened for firewood cutting would reduce nesting structures. People running chainsaws would cause disturbance to white-headed woodpeckers during the firewood cutting period.

Cumulatively there would disturbance and reduction of secondary nesting structure in 62 acres of white-headed woodpecker nesting habitat along open roads. This is a net increase of 11 acres.

Reduction of nesting structures as well as disturbance by firewood cutting on 62 acres of white-headed woodpecker nesting habitat **"May impact individuals or habitat, but will not likely contribute to a trend toward federal listing or loss of viability to the population or species."** The ULDR project would contribute to a slight negative trend in viability of white-headed woodpeckers on the Deschutes National Forest.

Northern Waterthrush,

The northern waterthrush is a small neotropical migrant that travels long distances nocturnally. Breeding habitat in North America includes a small area in the central Cascades of Oregon. NatureServe (2017) ranks the species in Oregon as "imperiled-breeding". The birds in central Oregon seem to prefer dense riparian willow thickets along water and are usually found in willow clumps five to eight feet high, with some Sitka alder intermixed with small grassy patches and pools of water left in old stream meanders, although no nests have been found (Contreras 1988).

The population's documented northern reach in Oregon starts in Linn County near Lost Lake Creek and then trends southeast to Gilchrist along the Little Deschutes River, Klamath County, and then extends southwest along Crescent Creek and Salt Creek east of the falls, (Lane County). No northern waterthrush nests have been found in Oregon. Marshall et al. (2003) suggests the lack of nest findings is due to impenetrable nesting habitat, dense willow and other vegetation thickets along slow moving rivers.

Pre-field Review

Surveys indicate the species is present along the Little Deschutes River and Crescent Creek on the Crescent Ranger District (Boucher pers comm. 2008 and Rosterolla pers comm. 2012). District surveys have also found northern waterthrush in small, open lodgepole pine pockets occurring adjacent to slow moving water with a dense willow component. Northern waterthrush habitat is present within riparian areas along the Little Deschutes River where willows are present. Known northern waterthrush locations are in Section 29 and 33 within the project boundary.

Survey History

In 2011 surveys on all likely habitat on the District were conducted. Surveys confirmed northern waterthrush in Sections 33 and 29.

Direct, Indirect, Cumulative Effects and Determination

Alternative A-No Action

Dispersed site 5 and 6 are in the vicinity of the Section 33 location and dispersed site 18 is located within Section 29 occupied northern waterthrush habitat. Continued expansion of these sites may remove existing waterthrush habitat.

Alternative B – Proposed Action

Riparian restoration project would restore water connections to the flood plain increasing willows and potential nesting habitat throughout the project area. Removal of dense lodgepole pine would reduce this secondary nesting habitat in the short-term, but increase preferred willow habitat in the long-term. Defining existing riverside dispersed sites and reducing unauthorized roads along the river would decrease destruction and disturbance of occupied habitat and potential habitat. No other Sustainable Transportation actions would impact the northern waterthrush. Implementation of the project would occur after the breeding season.

With no overlapping projects that would impact the northern waterthrush there would be no cumulative effects.

With an overall increase of habitat from riparian restoration actions and a decrease in loss and disturbance of occupied and potential habitat, the ULDR project has the potential to increase the population of northern waterthrush on the Little Deschutes River. Implementation of the ULDR project would have a **"Beneficial Impact"** to the northern waterthrush.

Bats

Most bats are insectivores and need insects to eat, water to drink and places to roost and hibernate. R6 Sensitive bat species include the Townsend's big-eared bat, pallid bat, spotted bat and the fringed myotis.

Townsend's Big-Eared Bats is a non-migratory bat that is highly dependent on caves, or cave-like structures including mines, for winter hibernation (October-May), maternity colonies for birthing and rearing young, and day and night roost sites. Winter hibernation sites that provide cold winter temperatures and maternity sites that provide high temperatures free from human disturbance are critical habitat components needed by this species and are limited on the Forest. This species also uses buildings, bridges, and rock crevices for roost sites in open montane, ponderosa pine, and juniper forests. Townsend's big-eared bats feed primarily on moth species. Individuals moved up to 15 miles (24 km) from hibernacula to foraging areas (NatureServe 2018). Both sexes apparently used a series of interim roost sites between emergence from hibernation and the time females entered maternity colonies, with little individual fidelity to these sites. The Townsend's big-eared bat was selected as a MIS for the Deschutes National Forest. It is an indicator species for cave habitats.

Pallid Bats are found in arid deserts and grasslands, often near rocky outcrops, water, and less abundant in evergreen and mixed conifer woodlands. Pallid bats usually roost in rock crevices or buildings, and less often in caves, tree hollows, mines, etc (Harvey et al. 1999). In Oregon, night roosts were in buildings, under rock overhangs, and under bridges; bats generally were faithful to particular night roosts both within and between years (Lewis 1994). Pallid bats prefer narrow crevices in caves as hibernation sites (Caire et al. 1989). Foraging areas generally are not far from day roosts but up to at least 4-7 miles (7-11 kilometers) away (NatureServe 2018).

Spotted Bat occurs in various habitats from desert to montane coniferous stands, including open ponderosa pine, pinyon-juniper woodland, canyon bottoms, riparian and river corridors, and meadows. NatureServe (2018) reported this species roosts in caves, cracks and crevices in cliffs and canyons. Habitat requirements, presence of large cliffs and water, appear to limit its distribution (Rodhouse et al 2005). Moths appear to be the primary food source. Active foraging may be mostly in open terrain, including forest clearings, meadows, and open wetlands (NatureServe 2018).

Fringed Myotis are migratory to Oregon. They occur primarily at middle elevations in desert, riparian, grassland, and woodland habitats. On the east side of the Cascade Range in Oregon and Washington, females roosts primarily in rock crevices and infrequently in ponderosa pine snags. Their primary food source appears to be moths, beetles and spiders that they capture in flight or glean from plants. (NatureServe 2018). Foraging occurs close to the vegetative canopy. (NatureServe 2018)

Pre-field Review and Survey History.

There are no known caves or mines on the Crescent Ranger District (L. Hickerson pers comm. 2008) to provide habitat for the Townsend's, pallid or spotted bat or the fringed myotis. The nearest caves is on the adjacent Ranger District approximately 25 miles northeast of the project area. The nearest cave known to be occupied by bats is approximately 45 miles northeast of the project area. At the boundary of the project area there is a bridge that crosses the Little Deschutes River on Highway 58 that may provide roosting habitat for Townsend's and pallid bats and fringed myotis. Large diameter hollow trees that may provide roosting habitat for fringed myotis and pallid bats do not exist in the project area but may occur outside the project area. NatureServe (2018) ranks all of these bats as "imperiled".

The Townsend's, and spotted bats and fringed myotis occur in caves on the Bend-Ft. Rock Ranger District of the Deschutes National Forest. Pallid bats are suspected to occur on the Deschutes National Forest as yet there have been no detections. No observations or detections of any of these bats have been reported on the Crescent Ranger District. No surveys were conducted specifically for this project. Surveys were not needed to assess the potential effects of this project on R6 sensitive bats.

Direct, Indirect, Cumulative Effects and Determination

Alternative A - No Action

R6 sensitive bats are unlikely to be present in the project area but have potential foraging habitat within the project area over water, within riparian areas, meadows and forest openings. The no action alternative would not alter how these bats would utilize the project area.

Alternative B – Proposed Action

There are no proposed actions that would alter habitat for bats. There is no maternity, roosting or foraging habitat that would be altered or disturbed by any proposed actions. All actions take place during the day so there would be no disruptions to foraging bats.

With no overlapping projects that would impact the Townsend's big-eared bat, pallid bat, spotted bat and the fringed myotis there would be no cumulative effects.

Implementation of the ULDR project would have **"No Impact"** to the Townsend's big-eared bat, the spotted bat, the pallid bat or the fringed myotis. The project would not contribute to any change in population trend of the Townsend's big-eared bat's viability on the Deschutes National Forest.

Tightcoils

The **Crater Lake tightcoil** may be found in perennially wet situations in mature conifer forests, among rushes, mosses and other surface vegetation or under rocks and woody debris within 33 ft. (10 m) of open water in wetlands, springs, seeps, and riparian areas, generally in areas which remain under snow for long periods of time during the winter. Riparian habitats in the eastern Oregon Cascades may be limited to the extent of permanent surface moisture, which is often less than 10 meters from open water (Duncan et al. 2003). NatureServe (2017) lists the Oregon status of the Crater Lake tightcoil as "critically imperiled".

Most known sites for the **shiny tightcoil** are in ponderosa pine and Douglas-fir forests at moderate to high elevations (Frest and Johannes 1995 in USDA 2010). The eastern Washington record is from a relatively moist, shaded basalt cliff with talus and deciduous (aspen, cottonwood) cover. Elsewhere, the habitat is described as primarily under deciduous trees, particularly quaking aspen and red alders (Burke and Leonard in USDA 2010).

Pre-field Review

There is only one confirmed occurrence of the Crater Lake tightcoil on the Crescent Ranger District, found at the confluence of Princess Creek and Odell Lake in 1999. There is potential habitat along the Little Deschutes River where tree cover prevents habitat from drying out.

There are no known sites for the shiny tightcoil on the Crescent Ranger District. Potential habitat may occur under hardwoods such as willows and aspen where they occur in seasonally or perennially wet areas. There is potential habitat along the Little Deschutes River.

Survey Methods and Results

Surveys were not conducted for this analysis. Surveys were not needed to assess the potential effects of this project.

Direct, Indirect, Cumulative Effects and Determination

Alternative A-No Action

There would be little change to tightcoil habitat with this alternative. There is potential for recreational dispersed sites to continue to spread into perennial wet areas removing vegetation and decreasing habitat. Unauthorized roads would continue to provide motorized access into sensitive wet areas, preventing natural restoration of habitat for tightcoils.

Alternative B – Proposed Action

Stream structures would increase connections to the flood plain and recharging ground water has the potential to increase habitat for both of the tightcoils by increasing seasonal and perennial wet areas. Restoration of willows and aspen stands would also benefit the shiny tightcoil providing additional hardwood habitat.

All recreational dispersed sites and unauthorized trails are adjacent to the river or perennial wet areas. Dispersed sites are to be pulled back from the riparian area. Because of the moisture available, native plants are expected to be reestablished in these areas providing habitat for Crater Lake tightcoil. Where shrubs and willow or other hardwoods become established, habitat for the shiny tightcoil would be reestablished.

The unauthorized road leading from DS #1 to 2 would be blocked and the foot print would be reduced to a trail. The unauthorized OHV trail and bridge near DS #14 would be rehabilitated and provide additional habitat. Other unauthorized roads would be closed and rehabilitated where necessary, reducing motorized access to sensitive wet areas. No other Sustainable Transportation actions are within tightcoil habitat.

With no overlapping projects that would impact tightcoil habitat there would be no cumulative effects.

With an overall increase of habitat from riparian restoration actions and a decrease in loss and disturbance of potential habitat the ULDR project has the potential to increase the quantity and quality of habitat for both the Crater Lake tightcoil and the shiny tightcoil. Implementation of the ULDR project would have a **"Beneficial Impact"** to the Crater Lake tightcoil and the shiny tightcoil.

Silver-bordered Fritillary

Pre-field Review

The **Silver-bordered fritillary** is common and widespread in northeastern Washington and northern Idaho, colonies are extremely local and isolated southward, and are particularly vulnerable to local extinctions. Only two primary colonies are found in Oregon, one at Big Summit Prairie on the Ochoco National Forest and one in the Strawberry Mountains Wilderness on the Malheur National Forest (Miller and Hammond 2007). This species is dependent on the maintenance of open and wet meadow habitats (Miller and Hammond 2007). Food sources for the adults include nectar sources such as composite flowers (Opler et al. 2006). Eggs are laid singly near host plants and caterpillar hosts are violets including Viola glabella and Viola nephrophylla (Opler et al. 2006). NatureServe (2018) lists the Oregon state ranking as "imperiled". While there is potential habitat on the Crescent Ranger District, there are no known occurrences of the silver-bordered fritillary.

Survey History

Surveys for the silver-bordered fritillary have occurred opportunistically along the meadow and wetland areas in 2015 and 2016, none were observed.

Direct, Indirect, Cumulative Effects and Determination

Alternative A-No Action

While meadow and floral habitat occurs within the project area, it is unknown if it is suitable for either butterfly. There would be no change to butterfly habitat with this alternative. There is potential for recreational dispersed sites to continue to spread, removing vegetation and deceasing habitat diversity of vegetation at those sites. Encroaching lodgepole pine would continue to reduce riparian habitat and the flowering species that occur there.

Alternative B – Proposed Action

Removal of lodgepole pine and construction of stream structures increasing connections to the floodplains would provide additional wet meadow habitat increasing the diversity of flowering plants for the butterflies. Lodgepole pine cutting may remove some trees with mistletoe, but the older larger trees, most likely to be infected would remain.

All recreational dispersed sites and unauthorized trails adjacent to the river or perennial wet areas are to be pulled back from the riparian areas and roads that go through meadow areas would be closed. Because of the moisture available, native plants are expected to be reestablished in these areas quickly. Reestablishment of native plants may increase foraging habitat for the adult form of both of the butterflies.

With no overlapping projects that would impact butterfly habitat, there would be no cumulative effects.

With an overall increase of diversity of flowering plants in meadow habitats from restoration actions and a decrease in the loss and disturbance of potential habitat from the recreating public, the ULDR project may have a **"Beneficial Impact"** to the silver-bordered fritillary.

Bumblebees

Western bumblebee was once widespread and common throughout the western United States and western Canada before 1998. For Oregon, NatureServe (2019) lists them as "critically imperiled" to "imperiled". The western bumblebee visits a wide variety of wildflowers including Aster spp., *Gaultheria shallon* (salal), *Pedicularis* (elephant's head), *Penstemon, Phacelia, Prunus* spp. (cherry), Rhododendron spp., *Solidago* spp. (Goldenrod), *Symphoricarpos* spp. (snowberry), *Trifolium* spp. (clovers), Salix (willow), plus many others. The western bumblebee nests underground, often utilizing abandoned rodent burrows and bird nests. Hibernation sites include dead grass, and leaf litter under shrubs and trees (Xerces 2015).

Morrisoni Bumblebee (*Bombus morrisoni*) –NatureServe (2019) lists them as "critically imperiled" to "imperiled" in Oregon. The Morrisoni bumblebee is thought to be a moderately widespread species. A generalist forager the Morrisoni bumblebee has a very short tongue and is best suited to forage at open flowers with short corollas (Williams et al. 2014). According to Williams et al. (2014), important food plants for B. morrisoni are in the genera *Asclepias, Astragalus, Chrysothamnus, Cirsium, Cleome, Ericameria, Helianthus, Melilotus*, and Senecio. Similar to the western bumblebee the Morrisoni is also thought to nest underground.

Suckley Cuckoo Bumblebee *(Bombus suckleyi)* – Is not currently ranked in NatureServe (2017) for Oregon, but globally "impaired". A species in the subgenus *Psithyrus* they are unique in that they are dependent on another *Bombus* spp. to serve as a host. As with other cuckoo species they are nest parasites of other bumblebees. They emerge in the spring later than their hosts. Once they find a suitable host the female *Psithyrus* takes over the colony. B. suckleyi has been documented breeding as a parasite of colonies of Bombus occidentalis, and has been recorded as present in the colonies of B. terricola, B. rufocinctus, B. fervidus, B. nevadensis, and B. appositus (Williams et al. 2014).

Pre-field Review

Western bumblebees have been documented on the Deschutes National Forest near Sparks Lake, in the Sunriver vicinity, and along the Little Deschutes River and Crescent Creek on the Crescent Ranger District. In Oregon, this **Morrisoni bumblebee** has been "Documented" on the Wallowa-Whitman and Willamette National Forests. It is "Suspected" on the Umatilla, Ochoco, Malheur, Deschutes, and Fremont-Winema National Forests and on the BLM Burns District lands due to proximity to known records. **Suckley cuckoo bumblebee** has been historically observed along the Cascade Mountains, with a few observations in the coast range, and a handful of observations in the northeastern portion of the state (Richardson 2017). The two most recent records from the state are from 1994 in Lane County (Richardson 2017) and 2015 in Jackson County (Xerces Society et al. 2017). In Oregon, this species has been "Documented" on the Deschutes, Fremont-Winema, Mt. Hood, Rogue River-Siskiyou, Wallowa-Whitman and Willamette National Forests, as well as the BLM Northwest Oregon District lands.

Survey History
Surveys have occurred opportunistically along the meadow and wetland areas in 2015 and 2016, resulting in location of a western bumblebee. Data located in NRIS database. No other sensitive bumblebees were found.

Direct, Indirect, Cumulative Effects and Determination
Alternative A-No Action
There would be no change to bumblebee habitat with this alternative. There is potential for recreational dispersed sites to continue to spread, removing vegetation and decreasing habitat. Unauthorized routes would continue to provide motorized access, preventing restoration of potential habitat for bumblebees.

Alternative B – Proposed Action
Lodgepole pine removal and stream structures increasing connections to the flood plain and recharging ground water would providing a greater gradient of wet to dry conditions increasing the diversity of flowering plants for bumblebees. Holding water later into the summer also has the potential for lengthening the flower period, which would also benefit bumblebees.

All recreational dispersed sites and unauthorized trails are adjacent to the river or perennial wet areas are to be pulled back from the riparian area. Other unauthorized roads would be closed and rehabilitated where necessary, reducing motorized access to sensitive areas where bumblebees forage. Because of the moisture available, native plants are expected to be reestablished in these areas.

With no overlapping projects that would impact bumblebee habitat there would be no cumulative effects.

With an overall increase of habitat from riparian restoration actions and a decrease in the loss and disturbance of potential habitat the ULDR project would have a **"Beneficial Impact"** to the western bumblebee, Morrisoni bumblebee and Suckley cuckoo bumblebee.

MANAGEMENT INDICATOR SPECIES (MIS)

INTRODUCTION
During the preparation of the Deschutes National Forest Land and Resource Management Plan (LRMP) (USDA 1990), a group of wildlife species were identified as Management Indicator Species (MIS). These species were selected because their welfare could be used as an indicator of other species dependent upon similar habitat conditions. Indicator species can be used to assess the impacts of management actions on a wide range of other wildlife with similar habitat requirements.

The following tables displays the Management Indicator Species (MIS) selected for the Deschutes National Forest. It includes the species NatureServe Status, a brief habitat description, what the species is an indicator for and species presence and/or habitat within the project area. NatureServe Status is a risk of extirpation rating. NatureServe and its network of natural heritage programs, including the Oregon State Heritage Program, are the leading source of information about rare and endangered species and threatened ecosystems. The ratings are alpha numerical with the following definitions:

S=Subnational geographic scale in this case it is the state of Oregon, National, and/or Global rankings may differ
1 = Critically Imperiled—At very high risk of extirpation in the jurisdiction due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors.
2 = Imperiled—At high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
3 = Vulnerable—At moderate risk of extirpation in the jurisdiction due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.
4 = Apparently Secure—At a fairly low risk of extirpation in the jurisdiction due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.

B = Breeding—Conservation status refers to the breeding population of the species in the nation or state/province.
N = Nonbreeding—Conservation status refers to the non-breeding population of the species in the nation or state/province.
M = Migrant—Migrant species occurring regularly on migration at particular staging areas or concentration spots where the species might warrant conservation attention. Conservation status refers to the aggregating transient population of the species in the nation or state/province.
SHB = possibly extirpated breeding

More information on NatureServe can be found at their website: http://explorer.natureserve.org/index.htm. Habitat descriptions are a synopsis of and incorporated by reference of the Forest-wide assessment for MIS identified in the Deschutes LRMP completed for the entire Deschutes NF (USDA 2012). A complete description of habitat needs can be found in those analyses.

MIS TES

MIS Table 1 refers to the TES species that were also designated MIS. Please refer to the TES section for analysis of these species.

MIS Table 1. MIS Wildlife Species - TES

Species	Nature Serve Status	General Habitat	Indicator For	Species or Habitat Present
TES SPECIES				
Northern Spotted Owl (see TES)	S3	Old growth mixed conifer forest	Dense, mature old growth mixed conifer forest	No
Wolverine (See TES)	S1	Mixed forests, High elevations	TES	No
American Peregrine Falcon	S1	Cliffs and Riparian	Cliffs and Riparian	No
Townsend's Big-eared Bat (See TES)	S2	Roost sites in building, caves and bridges	TES	No
Lewis's Woodpecker (See TES)	S2	Open Ponderosa Pine habitat, cottonwood dominated riparian habitat	Snags	No
Northern Bald Eagle (See TES)	S4	Lakeside with large trees	Large trees	Yes
Bufflehead (See TES)	S2B,S5N	Utilizes tree cavities in dense forest close to lakes and ponds and low gradient rivers	Popular for hunting or viewing	Yes
White-headed Woodpecker (See TES)	S2	Old growth Ponderosa Pine open with low brush densities	Snags	Yes

BIRDS OF PREY

MIS Table 2 refers to the birds of prey that were designated MIS in the LRMP. It includes northern goshawk, Cooper's hawk, sharp-shinned hawk, red-tailed hawk, great gray owl, osprey and golden eagle. All but the golden eagle have potential nesting and/or foraging habitat within the project area. While there is one unconfirmed sighting of golden eagles just outside the project area, golden eagles prefer larger areas of open country than is available on the Crescent Ranger District. The sighting is suspected to be a misidentified juvenile bald eagle, or a dispersing golden eagle.

MIS Table 2. MIS Wildlife Species – Birds of Prey

Species	Nature Serve Status	General Habitat in Oregon	Indicator For	Species or Habitat Present
Birds of Prey				
Northern Goshawk	S3	Closed (nesting and foraging) to open (foraging) canopy forests with a mosaic of large trees, snags and down wood suitable for foraging, nesting and post-fledgling areas.	Dense Mature and Old Growth Ponderosa Pine, also Lodgepole Pine, Mixed-Conifer Forests (Biological Community Barometer Species)	Yes, approx. 537 acres of potential nesting habitat, no known nests
Cooper's Hawk	S4	Dense middle-aged mixed conifer forests (nesting) with open understory, open woodlands and riparian woodlands (foraging).	Dense Forest Species	Yes, approx. 245 acres of potential nesting habitat, no known nests
Sharp-shinned Hawk	S4	Dense young mixed conifer forest (nesting and foraging)	Dense Forest Species	Yes, approx. 309 acres of potential nesting habitat, 1 known nest in northern portion of project
Red-tailed Hawk	S5	Large trees in open canopy or edge habitat in conifer stands (nesting and foraging)	Non-Game Species of Special Interest	Yes, approx. 120 acres of potential nesting habitat, no known nests
Great Gray Owl	S3	Dense second growth to old growth coniferous and mixed conifer/lodgepole pine and or spruce forests (nesting) within proximity to openings in forests, meadows and/or wetlands (foraging)	Edge Species	Yes, approx. 1,938 acres of potential nesting habitat, no known nests
Osprey	S4	Nests within 2 miles of fish bearing bodies of water	Non-Game Species of Special Interest	Yes, approx. 5,067 acres of potential nesting habitat, no known nests
Golden Eagle	S3S4	Elevated nest sites in open country	Non-Game Species of Special Interest	No habitat*
*There is one unconfirmed sighting of golden eagle just outside the project area. Potentially misidentified juvenile bald eagle or a dispersing golden eagle. Golden eagles prefer larger areas of open country than exist on the Crescent Ranger District				

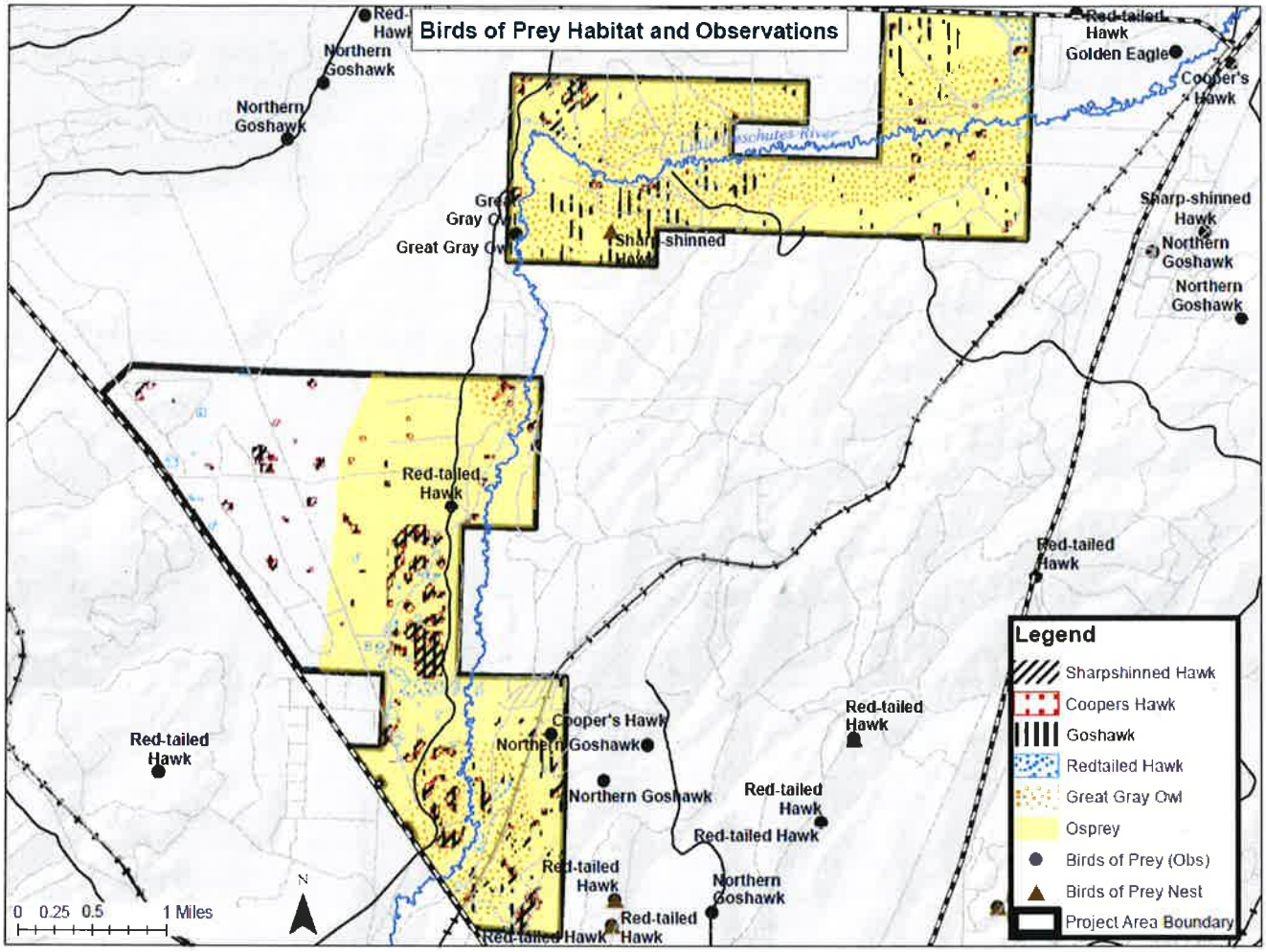
Direct, Indirect and Cumulative Effects

Alternative A-No Action

Previous vegetation management resulted in a mix of dense habitat that provides potential nesting for Goshawk, Cooper's hawk, sharp-shinned hawk, great gray owl; foraging for sharp-shinned hawk; varying degrees of canopy closure in open habitat that provides ecotones or edges for nesting red-tailed hawk, and osprey; and foraging habitat for red-tailed hawk, great gray owl and Cooper's hawk. Potential nesting habitat for the birds of prey would be maintained in existing pockets and patches across the project area (MIS Figure 1).

Encroaching lodgepole pine on riparian meadows would continue to reduce foraging habitat for great gray owls and red-tailed hawks. Current road system and unauthorized roads break up habitat reducing core habitat blocks preferred for nesting and provides an avenue for disturbance to birds of prey. Birds of prey vary in their

response to recreational activities. Individual hawk responses to hikers, snowmobiles, motorcycles or horseback riders vary from habituation and tolerance to disruption of nesting.



MIS Figure 1. Potential nesting habitat for MIS Birds of Prey

Alternative B – Proposed Action

There would be no reduction in potential nesting habitat for any of the birds of prey. Although restoration efforts would remove trees to create stream structures, no trees over 21 inches DBH would be removed. There would be no removal of potential perch trees or nest trees for birds of prey. Removal of encroaching lodgepole pine in meadows and aspen stands would increase hunting opportunity and diversity of prey species for all the birds of prey except osprey. Instream projects, once completed, would improve water quality and habitat for fish, having the potential to increase the prey base for osprey foraging in this stream system.

Reduction of dispersed site sizes, along with removal of unauthorized roads and trails has the potential to reduce recreational use in some areas of the river. Reduction of road densities in the uplands would reduce access to nesting habitat, creating larger blocks without potential disturbance. Other transportation actions of opening, permitting driveways, constructing pullouts, installation of signs etc., would have no impact to birds of prey or their habitat.

Overlapping projects that may have impacts to MIS birds of prey would be the roadside firewood project. Firewood gathering would impact nest adjacent to roads. There is one known nests for these species within the project area. The sharp-shin hawk nest in the northern portion of the project area. The nest is more than 0.25

miles from any proposed action on a closed road that would remain closed, so there would not be any disturbance from either project. There would be no cumulative effects.

Conclusion

Implementation of the ULDR project would not alter nesting habitat for the MIS birds of prey. Reducing road density and number of dispersed sites would reduce potential disturbance to nesting habitat. Removal of lodgepole from meadows and aspen may improve foraging for birds of prey that hunt in open conditions or edges such as great gray owls, red-tail hawks and Cooper's hawk. Overall the ULDR project would not contribute to a negative trend in viability on the Deschutes National Forest for the northern goshawk, Cooper's hawk, sharp-shinned hawk, red-tailed hawk, great gray owl, or osprey.

DEADWOOD DEPENDENT SPECIES

MIS Table 3 refers to the deadwood dependent species that were designated MIS in the Deschutes LRMP. It includes the red-naped sapsucker, red-breasted sapsucker, Williamson's sapsucker, northern flicker, pileated woodpecker, black-backed woodpecker, three-toed woodpecker, hairy woodpecker, downy woodpecker and Pacific marten. All but the pileated woodpecker have potential nesting and foraging habitat within the project area. There are no known nests or dens within the project area (MIS Figure 2).

MIS Table 3. MIS Wildlife Species – Deadwood Dependent Species

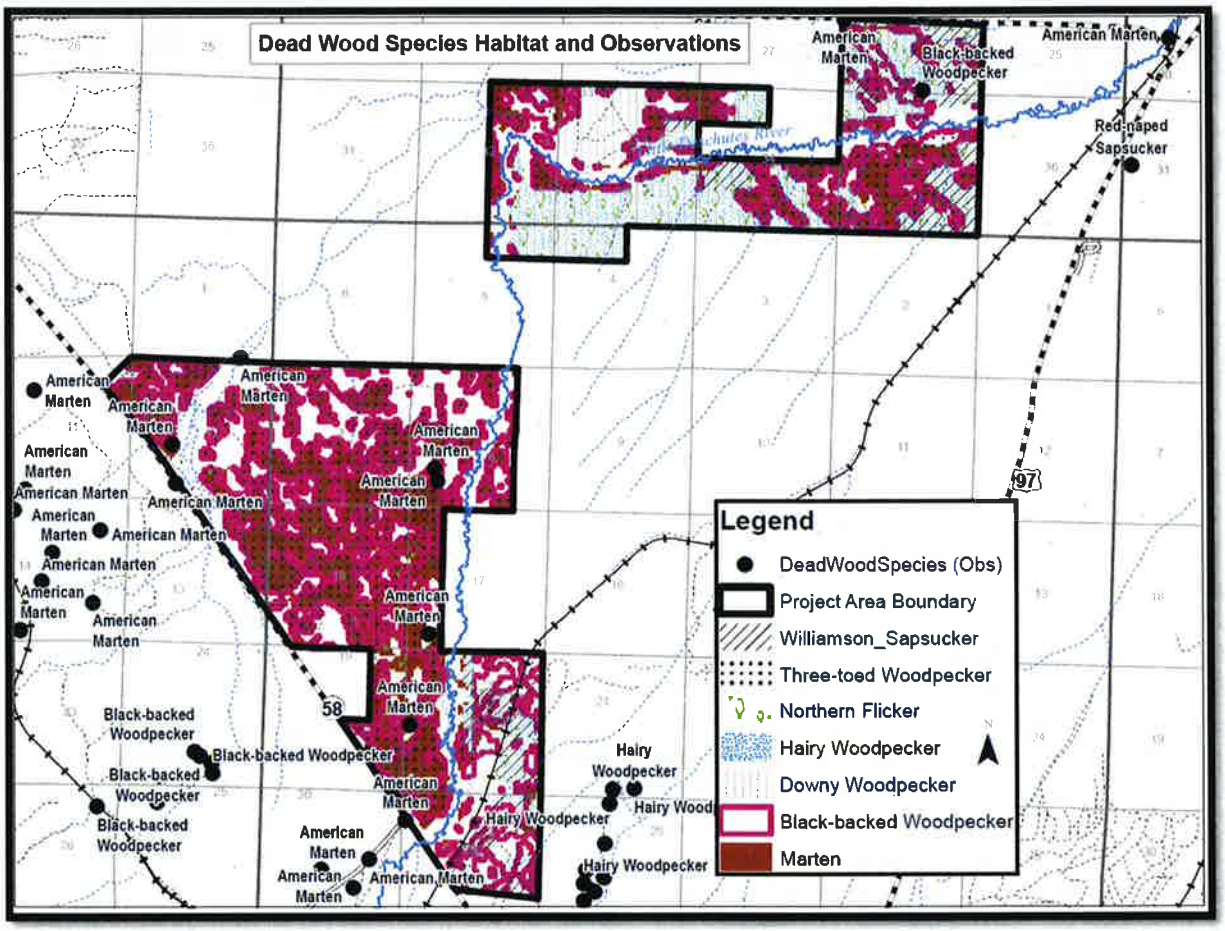
Species	Nature Serve Status	General Habitat	Indicator For	Species or Habitat Present
Deadwood Dependent				
Red-naped Sapsucker	S4B,S3N	Open pine, mixed conifer, and aspen forests, nests in snags greater than 10" DBH	Snags	Yes, habitat not modeled
Red-breasted Sapsucker	S4	Aspen or Willows within ponderosa pine forests	Snags	Yes, habitat not modeled
Williamson's Sapsucker	S4B,S3N	Mid- to high-elevation mature or old-growth conifer forests with fairly open canopy cover	Snags	Yes, approx. 565 acres of potential nesting habitat
Northern Flicker	S5	Open forests and forests edges adjacent to open country	Snags	Yes, approx. 1,460 acres of potential habitat
Pileated Woodpecker	S4	Mature and Old Growth Mixed Conifer Forest with abundant deadwood	Snags and down wood	No
Black-backed Woodpecker	S3	Conifer forests including ponderosa pine, lodgepole pine, Douglas -fir/mixed conifer with high proportions of dead trees	Snags	Yes, approx. 2,313 acres of potential nesting habitat
Three-toed Woodpecker	S3	Lodgepole pine, mixed-conifer, Douglas -fir/mixed conifer forests at high elevations	Mature and Old Growth Lodgepole Pine Forest, also with Engelmann Spruce or Mtn. Hemlock (Biological Community Barometer Species)	Yes, approx. 2,022 acres of potential nesting habitat
Hairy Woodpecker	S4	Mixed-conifer and ponderosa pine forests adjacent to deciduous stands	Snags	Yes, approx. 2,684 acres of potential nesting habitat

Species	Nature Serve Status	General Habitat	Indicator For	Species or Habitat Present
Downy Woodpecker	S4	Aspen stands with riparian habitat, less common in mixed conifer and ponderosa pine forests	Snags	Yes, approx. 1,216 acres of potential nesting habitat
Pacific Marten	S3S4	Mixed conifer, lodgepole pine and high elevation hemlock/lodgepole pine late-successional forests	Dense, Multi-Layered, Mature, and Old Growth Forest, also Lodgepole Pine and Mtn. Hemlock Forests (Biological Community Barometer Species)	Yes, approx. 2,378 acres of potential denning habitat

Direct, Indirect and Cumulative Effects

Alternative A-No Action

There is habitat scattered across the project area for these species (MIS Figure 2.). Recreational activity generally does not impact these species except where destruction of habitat occurs such as at and in proximity to dispersed sites. Snags and down wood is generally cut for firewood at and within 100 to 200 feet of these sites depending on site size (some sites are larger than 100 ft). Extended presence of humans may also discourage utilization of the immediate area (approximately 300 ft.) by marten. Current dispersed sites (including dump sites) with a 300 foot habitat alteration/disturbance zone buffer is approximately 142 acres which includes 28 acres of potential marten denning habitat and anywhere from 6-28 acres of woodpecker nesting habitat (MIS Table 4). Marten, black-backed woodpecker, three-toed woodpecker and hairy woodpecker have 1 acre or less of potential habitat at a large number of dispersed sites.



MIS Figure 2. Potential nesting and denning habitat for MIS Deadwood dependent species

Downy woodpecker, northern flicker and Williamson sapsucker have more acres (5-10) at fewer sites. Red-breasted and red-naped sapsuckers' habitat was not modeled but is similar to downy and hairy woodpecker habitat respectively.

MIS Table 4. Potential Nesting/Denning Habitat for Deadwood Species

Potential Nesting/Denning Habitat for Deadwood MIS	Forest Acres	Project Area Acres	Acres of Potential Nesting/Denning Habitat within Buffer of Rec. site	# Rec Sites with Habitat**
Black-backed woodpecker	647,390	2,313	19	22
Downy woodpecker/Red-breasted Sapsucker*	178,054	1,216	20	5
Hairy woodpecker/Red-naped Sapsucker*	722,366	2,684	21	16
Pacific Marten	474,478	2,379	28	19
Northern flicker	269,917	1,460	11	7
Three-toed woodpecker	540,207	2,022	18	22
Williamson sapsucker	26,710	565	6	2

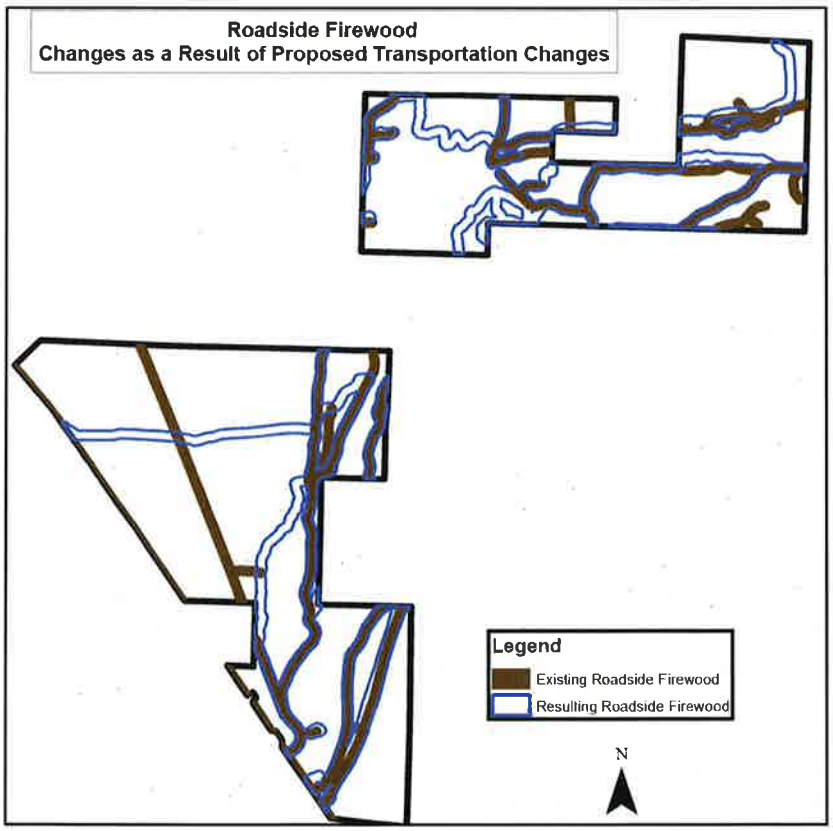
*Red-naped and red-breasted sapsucker habitats are not mapped, but similar to hairy and downy and hairy woodpecker's habitat. **Dump sites are included with dispersed recreation sites for a total of 22 sites.

In addition to recreation, ongoing impacts to these species includes the roadside firewood project. This project provides the public opportunity to gather deadwood within 200 feet of an open road for firewood. Deadwood can be standing or down but limited to less than 21 inches DBH. There is approximately 1,100 acres of roadside firewood within the project area. Along with disturbance, habitat components are removed. The narrow strip impacted is negligible compared to available habitat across the Forest.

Alternative B – Proposed Action

Instream structure placement would not impact the upland habitats of this group of species. Removing lodgepole pine from streamside meadows and aspen would improve habitat for the red-naped sapsucker, red-breasted sapsucker, hairy woodpecker, downy woodpecker, and Williamson's sapsucker, but remove potential nesting habitat for black-backed and three-toed woodpeckers.

Implementing the Sustainable Road System actions rearranges opened and closed roads, creating larger blocks of habitat that are not influenced by roads. However, it also alters existing roadside firewood cutting areas (MIS Figure 3). Unauthorized roads and closed roads with unauthorized use also had unauthorized firewood cutting, but cannot be quantified. While acknowledged the unauthorized firewood removal existed, these areas are not included in acres of roadside firewood. Those roads with authorized woodcutting increases with the implementation of the proposed project. The opening of previously closed roads in the north section of the project area to make a through route would allow a new area for firewood gathering, as well as opening roads for access to private lands and access for emergency vehicles in both sections (MIS Figure 3).



MIS Figure 3. Changes in Roadside Firewood from Existing to Implementing the Proposed Action

With the implementation of the Sustainable Roads System actions, authorized and unauthorized routes would be closed, and existing closed roads would have closures reinforced. This would limit the unauthorized activities on existing closed roads. Making through routes, safety routes and access to private lands through opening roads would increase authorized woodcutting on 1,270 acres, an 170 acre increase overall. MIS Table 5 shows

the changes in habitat affected by the road changes and subsequent changes in firewood cutting areas. While there are acres that are dropped from firewood cutting, there are new areas added. There is more habitat impacted for all species except for the Williamson's sapsucker where change is minimal. Williamson's sapsucker would go from 125 acres of potential nesting habitat impacted to 122. While only a three acre difference there are 33 acres dropped and 30 new acres added. The net change in total acres would be greatest for the northern flicker, with 250 acres of potential habitat currently with firewood cutting areas, would increase by 119 acres. There would be 35 acres dropped and 154 new acres of potential nesting habitat added. The number of new acres added to firewood cutting areas is greatest for the hairy woodpecker (213 acres) and marten (216 acres). The net change in acres is small, 68 acres for the hairy woodpecker and 39 acres for the marten, however, the number of acres of potential nesting and denning habitat dropped would be 145 and 177 respectively (MIS Table 5).

Firewood gathering would reduce nesting/denning and foraging components for all deadwood dependent species, reducing the quality and quantity of habitat within the 200 foot buffer along each side of open roads.

MIS Table 5. Changes in Roadside Firewood with the Proposed Action

Potential Nesting/Denning Habitat for Deadwood MIS					
Species	**Acres of Habitat within Existing Roadside Firewood**	**Acres of Habitat within changed Roadside Firewood**	**Acres Dropped**	**New Acres**	**Net Change Acres**
Black-backed Woodpecker	466	492	104	130	26
Downy Woodpecker	199	311	30	142	112
Hairy Woodpecker	512	580	145	213	68
Marten	448	487	177	216	39
Northern Flicker	250	369	35	154	119
Three-toed Woodpecker	393	404	94	105	11
Williamson's Sapsucker	125	122	33	30	-3
Red-Naped and Red-breasted Sapsucker habitats are not mapped, but similar to Hairy and Downy Woodpeckers					

Conclusion

Implementation of the ULDR project would alter habitat for the MIS deadwood dependent species. It has the potential to increase habitat for the red-naped sapsucker, red-breasted sapsucker, hairy, downy woodpecker, and Williamson's sapsucker through lodgepole pine removal in aspen, but remove potential habitat for marten, black-backed and three-toed woodpeckers. Reducing road density and number of dispersed sites would reduce potential habitat destruction and disturbance. Although some woodcutting areas would be dropped, new ones would be added. Overall implementation of the Sustainable Transportation actions increases the amount of habitat impacted by firewood cutting for all deadwood dependent species except the Williamson's Sapsucker. The Williamson's sapsucker would have a net decrease in potential nesting habitat impacted by firewood cutting by 3 acres.

Although any contribution would be negligible at the forest level, the ULDR project may contribute to a negative trend in viability for all deadwood dependent species on the Deschutes National Forest, except the Williamson's sapsucker which would contribute a slight positive trend to viability on the Deschutes National Forest.

BIG GAME

MIS Table 6 refers to the big game species selected as MIS for the Deschutes National Forest. Although there are no key elk management areas within the project area, elk are known to utilize the area. Hiding cover and

forage requirements are similar for both species. Mule deer generally tend to utilize smaller patches of hiding cover and prefer browsing shrubs over grazing grasses and sedges. Elk generally tend to utilize larger patches of hiding cover farther from roads and prefer grazing grasses and sedges over browsing shrubs. Both species will utilize all available forage habitat, seeking out preferred willow and young aspen. Discussions for these species will be combined as big game.

MIS Table 6. MIS Wildlife Species – Big Game

Species	Nature Serve Status	General Habitat	Indicator For	Species or Habitat Present
Big Game				
Mule Deer	S5	Mosaic of early, forage-producing stages and later, cover-forming stages of forests, i.e. conifer, ponderosa pine, lodgepole pine and mixed ponderosa/lodgepole pine forest with shrub understory, in close proximity	Popular for hunting or viewing	Yes, approx. 3,083 acres of hiding cover
Elk	S5	Mosaic of early, forage-producing stages and older cover-forming stages of forests, in close proximity	Popular for hunting or viewing	Yes, Utilizes hiding cover, No Key Elk Areas in Project Area

Although road densities are high within the project area, the standard is applied at a larger scale implementation unit. On the Crescent Ranger District the subwatershed is the implementation unit. The ULDR project is within two subwatersheds, Bunny Butte and Gilchrist Junction. Both of these subwatersheds are currently below LRMP minimum guidelines for Forest Service open road densities (2.5 mi/mi^2) and above guidelines for hiding cover (30 percent). Bunny Butte subwatershed road density is at 1.4 mi/mi^2 and hiding cover at 61percent and Gilchrist Junction subwatershed is at 2.1 mi/mi^2 and 44 percent hiding cover. Because these subwatersheds are within guidelines, further analysis as described in the LRMP (4-58 WL-53 and 4-73 TS-12) at the implementation unit is not necessary. Because the ULDR further reduces road density and would have minimal reduction on big game cover, the project area is the analysis area for direct, indirect and cumulative effects.

Core habitat analysis was completed at the forest level. This analysis determined habitat that is not potentially disturbed by human presence on roads and trails by buffering disturbance areas along roads. Maintenance Level (ML) 2 through 5 roads and motorized trails were buffered 656 feet (200 meters) on each side, ML 1 roads and non-motorized trails were buffered 328 feet (100 meters) on each side. Research shows the larger the core area is the more effective habitat is for big game. For deer, secure habitat is generally blocks of at least 0.1 acres scattered on the landscape, for elk secure habitat blocks need to be 250 acres (Vavra et al 2005). Because the forest level analysis did not have all unauthorized routes, the analysis was reran for the project area. The results are described in MIS Table 7.

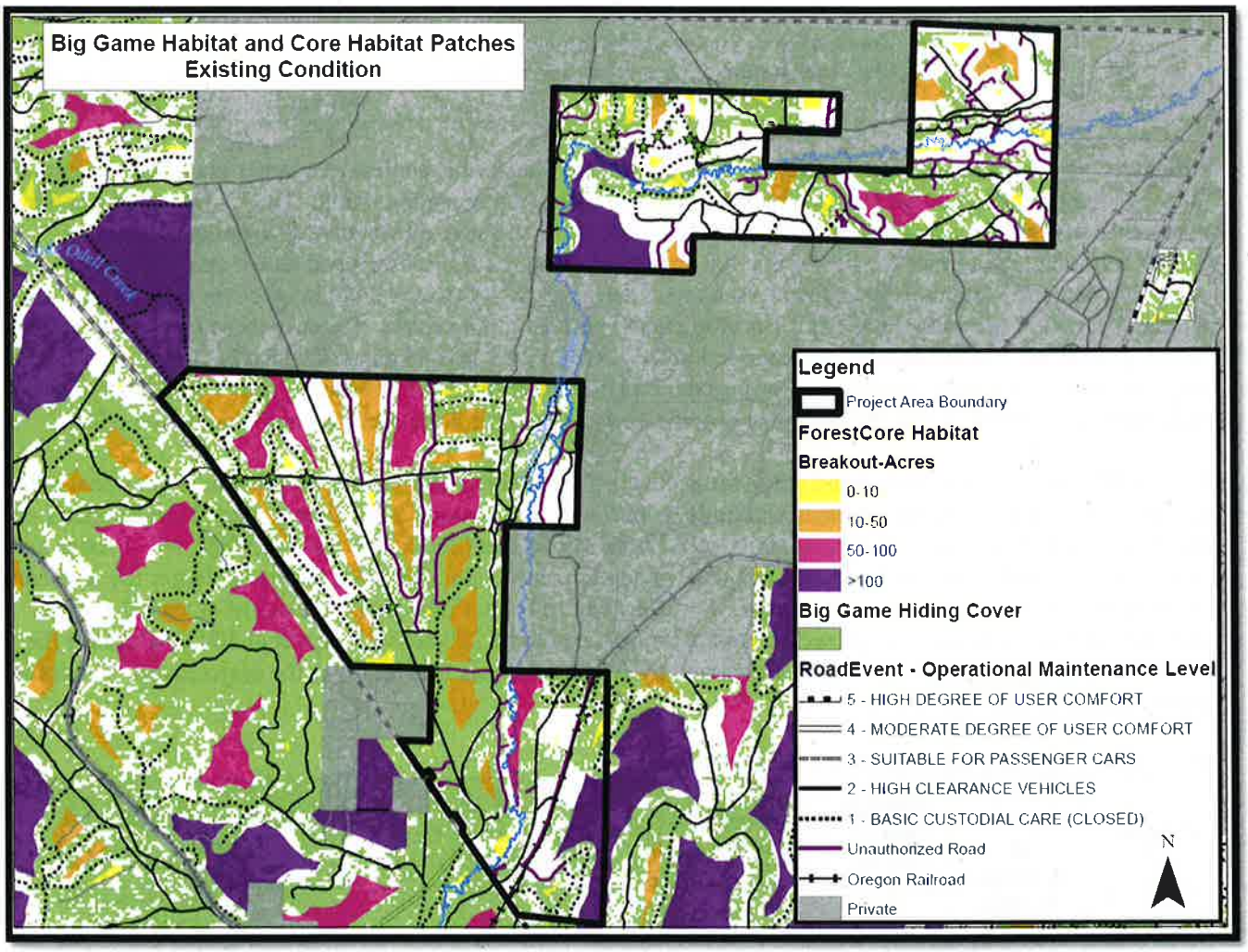
MIS Table 7. Existing Big Game Core Habitat Blocks

Category	Number of Existing Habitat Blocks	Average Size of Blocks	Range of Acres within Blocks		Total within Category	Percent of Project Area	Hiding cover within blocks	
Acres		Acres	Min.	Max.	Acres		Acres	% of cover within Blocks by category
0-10	32	4	0	9	114	2%	49	8%
10-50	19	24	11	48	454	7%	281	45%
50-100	6	62	51	85	375	6%	212	34%
>100	2	140	106	174	280	4%	87	14%
Totals	**59**				**1,223**	**19%**	**628**	**100%**

Direct, Indirect and Cumulative Effects

Alternative A-No Action

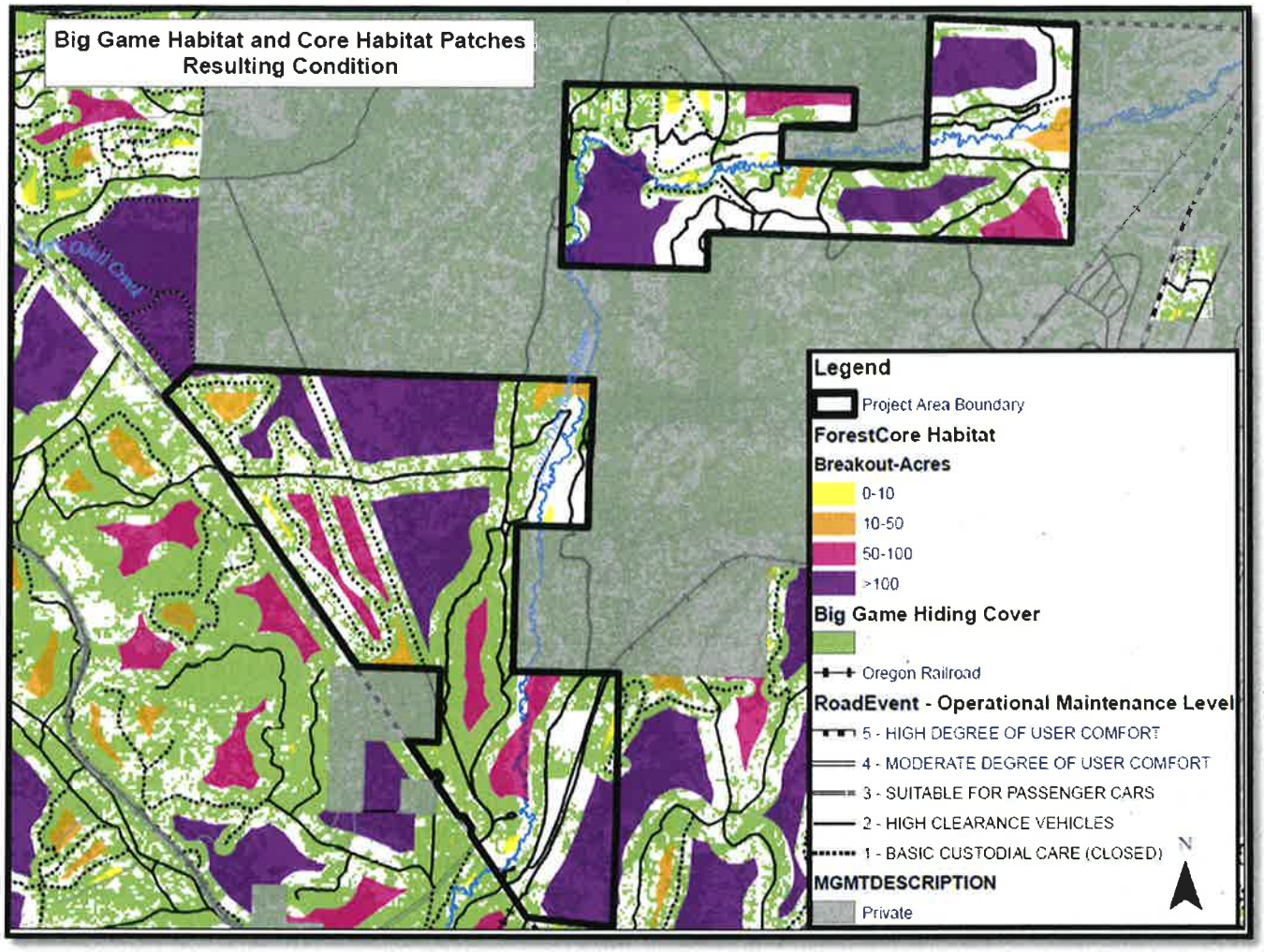
Habitat conditions would remain the same. Over the 6,286 acre planning area, 1,223 acres (19%) are within core habitat blocks, leaving the remaining 5,063 acres (81%) within a disturbance zone of a road or trail. Approximately 49% (3,083 acres) of the project area is hiding cover. Hiding cover is dispersed across the project area, providing a mix of hiding cover patches in proximity to foraging areas (MIS Figure 4). MIS Table 7 and MIS Figure 4 display the current distribution of core habitat blocks. Currently, due to road and trail density and juxtaposition there are only two blocks over 100 acres in the project area. Even with a good distribution of cover to forage overall, habitat effectiveness may be low due to the density and juxtaposition of roads and trails. Approximately 20% of hiding cover is within core habitat blocks, leaving the majority within proximity to a road or trail. Of the big game cover within the core habitat blocks, 45% are in blocks 10-50 acres (Table 7). The smaller blocks favor deer over elk. The project area may not support the number of big game it has the potential to due to the density and juxtaposition of roads and trails decreasing habitat effectiveness.



MIS Figure 4. Existing Big Game Hiding Cover with Core Habitat Blocks

Alternative B-Proposed Action

Lodgepole pine thinning removes approximately 3% (104 acres) of the hiding cover in the project area retaining 97% (2,979 acres). While proposed thinning would remove some hiding cover along the stream and within fawning/calving habitat areas, treatments would provide the higher quality forage of early seral grasses and forbs in the spring.



MIS Figure 5. Results of Alternative B Big Game Hiding Cover with Core Habitat Blocks

Recreation and access changes results in an increase of 403 acres of the project area in core habitat blocks outside of a disturbance zone of a road or trail, from 19% (1,223 acres) to 34% (2,167 acres). There would be larger core habitat blocks and more that are over 100 acres (MIS Table 8 and Figure 5). Tiny core habitat blocks (0-10 acres) would be reduced from 32 to 20 acres and small blocks (10-50 acres) would be reduced from 19 to 5 acres. With road closures, most core habitat blocks would be consolidated into larger blocks, with the largest core habitat blocks (>100 acres) increasing in numbers from 2 to 7. The largest core habitat blocks increases from 280 acres to 1,533 acres, which increases habitat effectiveness. Approximately 1,031 acres or 35 percent of the hiding cover within the project area is within core habitat blocks, with 65% of the hiding cover within blocks occurring in the largest blocks. Increased habitat effectiveness may increase the number of big game in the project area.

Implementation of the project may alter how big game utilize the analysis area. Disturbance from equipment and people working in and around the riparian areas may cause big game to temporarily move away from the work areas. The movement would be localized during the day and the animals would return once the disturbance is gone.

MIS Table 8. Alternative B Big Game Core Habitat Blocks

Category	Number of Habitat Blocks for Alternative B	Average Size of Blocks	Range of Acres within Blocks		Total within Category	Percent of Project Area	Hiding cover within blocks	
Acres		Acres	Min.	Max.	Acres	Acres	Acres	% of cover within Blocks by category
0-10	20	3	0	10	64	1%	27	3%
10-50	5	28	12	42	139	2%	76	7%
50-100	6	72	53	99	431	7%	243	24%
>100	7	219	108	393	1,533	24%	685	66%
Totals	38				2,167	34%	1,031	100%

Conclusion

Although the project decreases hiding cover by 104 acres there is sufficient remaining hiding cover (47%) to exceed Forest Plan minimum (30%). Reconfiguring the transportation system, closing roads, closing unauthorized roads and trails increases the number of acres within large core habitat blocks improving habitat effectiveness. Hiding cover changes from occurring in mostly 10-50 acre sized core habitat blocks to consolidated within >100 acre blocks. Short term disturbance during implementation may change use patterns on a localized and temporary basis. Over the long term ULDR project increases the habitat effectiveness for big game across the project area and contributes to a positive trend in viability of big game on the Deschutes National Forest.

AQUATIC BIRDS

MIS Table 9 refers to the aquatic birds selected as MIS for the Deschutes National Forest. These species were selected as they are popular for hunting or viewing, or are a riparian health indicator like the great blue heron. The primary habitat features for these species is water centric as they utilize nesting and/or foraging habitat in and around lakes, rivers, ponds etc. Those species whose habitat is present in the project area are more river/stream centric and includes gadwall, blue-winged teal, cinnamon teal, mallard, northern shoveler, Canada goose and great blue heron. All aquatic birds are migratory for the Crescent Ranger District.

MIS Table 9. MIS Wildlife Species – Aquatic Birds

Species	Nature Serve Status	General Habitat	Indicator For	Species or Habitat Present*
Aquatic Birds				
Barrow's goldeneye	S3B, S3N	Cavity nester near lakes and ponds; winters lakes, rivers, estuaries and bays	Popular for hunting or viewing	No
Common goldeneye	S4N	Cavity nester; uses ponds, lakes, rivers and costal bays, migrant and/or non-nesting in Oregon	Popular for hunting or viewing	No
Canvasback	S4	Emergent vegetation in complex wetlands	Popular for hunting or viewing	No
Gadwall	**S5**	**Concealed clumps of grasses in meadows and tall grasslands near lakes, ponds or streams**	**Popular for hunting or viewing**	**Yes, habitat not modeled**

Species	Nature Serve Status	General Habitat	Indicator For	Species or Habitat Present*
Lesser scaup	S3B,S4N	Dry grassy areas near lakes at least 10 ft. deep	Popular for hunting or viewing	No
Northern pintail	S5	Open areas near water	Popular for hunting or viewing	No
Redhead	S4	Freshwater marshes and lakes concealed in vegetation	Popular for hunting or viewing	No
Ring-necked duck	S3	Thick emergent vegetation on shorelines	Popular for hunting or viewing	No
Ruddy duck	S4	Freshwater marshes, lakes, ponds in dense vegetation	Popular for hunting or viewing	No
Blue-winged teal	**S4**	**Marshes, lakes, ponds, slow-moving streams**	**Popular for hunting or viewing**	**Yes, habitat not modeled**
Cinnamon teal	**S5**	**Cover of vegetation near shoreline**	**Popular for hunting or viewing**	**Yes, habitat not modeled**
Green-winged teal	S5S4B	Freshwater marshes with emergent vegetation	Popular for hunting or viewing	No
Wood duck	S4	Cavity nester along swift rivers	Popular for hunting or viewing	No
American wigeon	S5	Wetlands in prairies, parklands, river deltas and ponds with grasslands	Popular for hunting or viewing	No
Mallard	**S5**	**Open water with emergent vegetation**	**Popular for hunting or viewing**	**Yes, habitat not modeled**
Northern shoveler	**S5**	**Grassy areas near water**	**Popular for hunting or viewing**	**Yes, habitat not modeled**
Common loon	SHB, S5N	Edges of remote freshwater ponds and lakes	Popular for hunting or viewing	No
Eared grebe	S4	Open lakes and ponds with emergent vegetation	Popular for hunting or viewing	No
Horned grebe	S2B, S5N	Open lakes and ponds with emergent vegetation	Popular for hunting or viewing	No
Pied-billed grebe	S5	Ponds, lakes, channels and sloughs with emergent vegetation	Popular for hunting or viewing	No
Red-necked grebe	S1B, S4N	Lakes and ponds in forested areas	Popular for hunting or viewing	No
Western grebe	S1B, S2S3N	Marshes with open water and lakes and reservoirs with emergent vegetation	Popular for hunting or viewing	No
Common merganser	S4	Cavity nester; found on large bodies of water	Popular for hunting or viewing	No
Hooded merganser	S4	Cavity nester; found on wooded ponds, lakes, and wooded wetlands	Popular for hunting or viewing	No

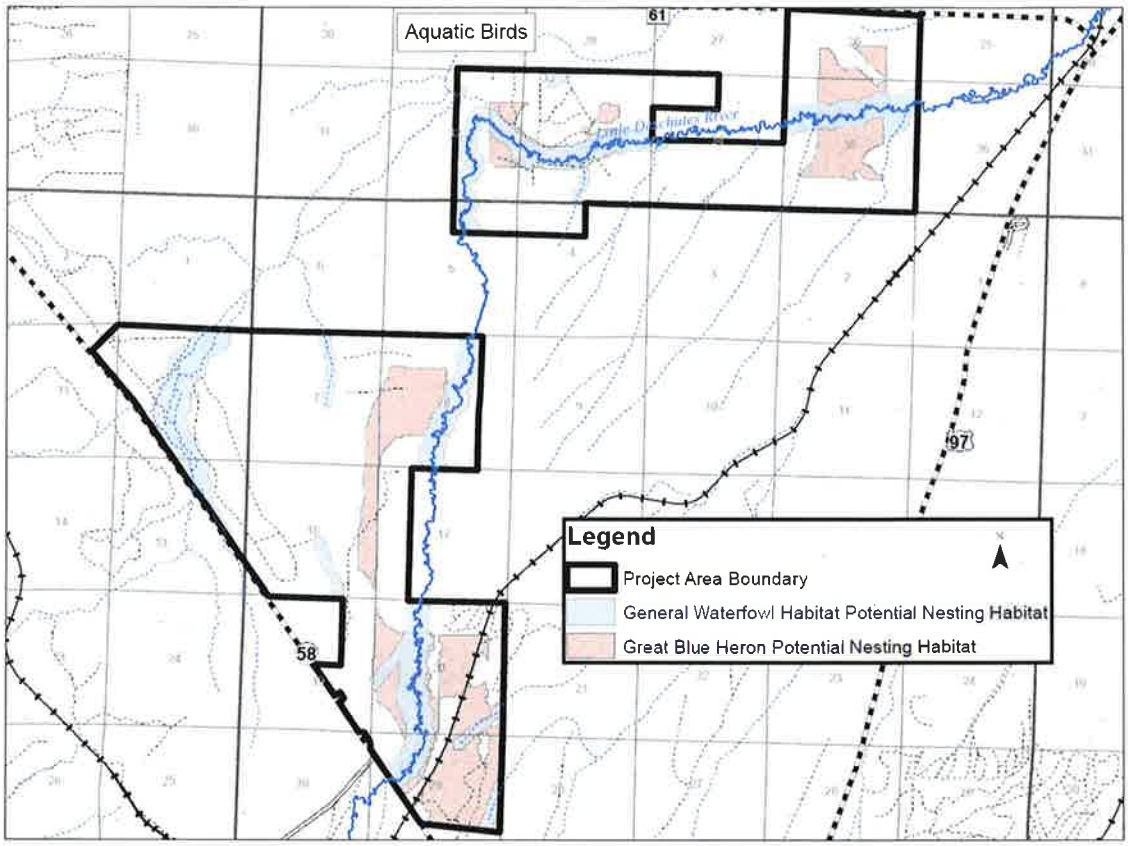
Species	Nature Serve Status	General Habitat	Indicator For	Species or Habitat Present*
Canada goose	**S5**	**Variety of habitat: shores of lakes, rivers, and reservoirs especially with cattails and bulrushes**	**Popular for hunting or viewing**	**Yes, habitat not modeled**
Great Blue Heron	**S4**	**Estuaries, Streams, Marshes, Lakes**	**Riparian Species**	**Yes, approx. 1,364 acres of potential nesting habitat**
*Habitat for individual waterfowl species was not modeled. General waterfowl habitat along rivers was modeled. There is approximately 1,068 acres of streamside waterfowl habitat within the project area.				

Direct, Indirect and Cumulative Effects

Alternative A-No Action

In the short-term there would be little change in existing habitat. There is approximately 1,068 acres of potential streamside waterfowl habitat and 1,364 acres of great blue heron nesting habitat within the project area (MIS Figure 6). Open ponds, streams, rivers, and wet/dry meadows provide foraging habitat for these species. The great blue heron utilizes large trees for nesting, while the waterfowl utilize open grassy areas near the water's edge. Most waterfowl diets consist primarily of vegetation, although some animal matter is taken (caddisflies, crustaceans, and mollusks). The great blue heron hunts the shallow waters of lakes, streams, and wet or dry meadows, feeding on fish, amphibians, aquatic invertebrates, reptiles, mammals and birds.

Through natural processes and a lack of fire along the river, lodgepole pine would continue to reduce grassy areas utilized by these species for foraging and nesting. Upland nesting habitat for the blue heron would continue to develop. Active recreational use of the area in dispersed sites would continue to disturb streamside habitat.



MIS Figure 6. Potential nesting habitat for waterfowl and the great blue heron

Alternative B – Proposed Action

Restoration of aquatic habitat would improve nesting for waterfowl and foraging for waterfowl and the great blue heron. The removal of encroaching lodgepole pine and installation of stream structures would result in maintenance of higher water levels through the summer and an increase in quality and quantity of riparian grasses, sedges and shrubs. Although encroaching lodgepole pine would be removed, there would be no trees over 21 inches DBH removed, leaving any potential nest trees for the great blue heron.

Reducing the number of roads and limiting sizes of dispersed sites within riparian habitat, would reverse the degradation of these areas. Although recreational use of dispersed sites would continue to disrupt adjacent nesting, improved riparian vegetative conditions would encourage foraging and provide additional viewing opportunities for the public.

As past activities have been incorporated into existing condition and there are no past, present or foreseeable future actions that impact these species, there are no cumulative effects.

Conclusion

Implementation of the project would not change the trend in population viability of the gadwall, blue-winged teal, cinnamon teal, mallard, northern shoveler, Canada goose and great blue heron on the Deschutes National Forest.

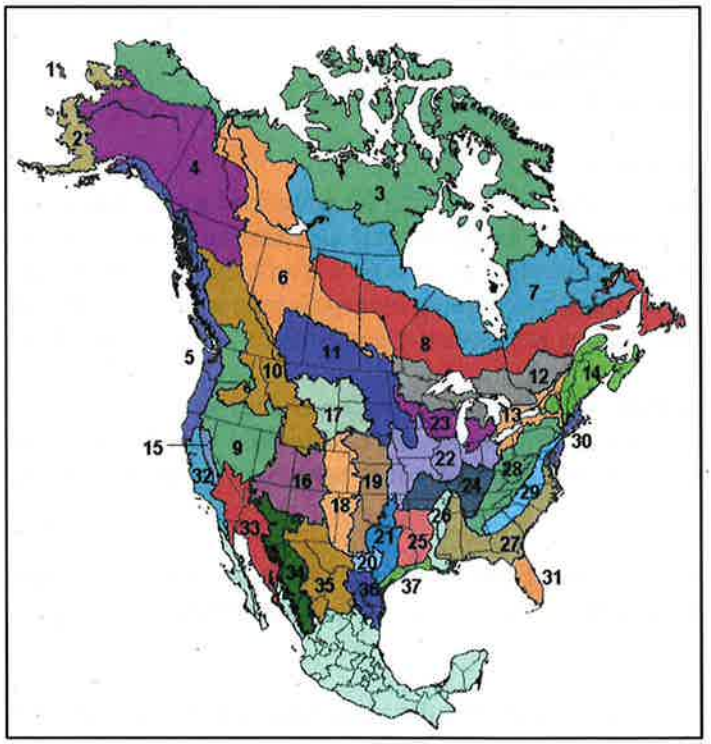
BIRDS OF CONSERVATION CONCERN (BCC)

INTRODUCTION

In January 2001, President Clinton issued an executive order on migratory birds directing federal agencies to avoid or minimize the negative impact of their actions on migratory birds, and to take active steps to protect birds and their habitat. Within two years, federal agencies were required to develop a Memorandum of Understanding (MOU) with the U.S. Fish and Wildlife Service to conserve migratory birds including taking steps to restore and enhance habitat, prevent or abate pollution affecting birds, and incorporating migratory bird conservation into agency planning processes whenever possible. Toward meeting this end the U.S. Fish and Wildlife Service developed the *Birds of Conservation Concern* in 2002 (updated in 2008) and released the U.S. Shorebird Conservation Plan (2004).

The Birds of Conservation Concern (BCC) identifies species, subspecies, and populations of all migratory non-game birds that without additional conservation protection actions, are likely to become candidates for listing under the Endangered Species Act of 1973. While all of the bird species included in the BCC are priorities for conservation action, the list makes no finding with regard to whether they warrant consideration for ESA listing. The goal is to prevent or remove the need for additional ESA bird listings by implementing proactive management and conservation plans.

Bird Conservations Regions (BCRs) were developed based on similar geographic parameters BCC Figure 1. One BCR encompasses the analysis area – BCR 9, Great Basin.



BCC Figure 1. USFWS Bird Conservations Regions

BCC Table 1 displays the BCR species for this area, preferred habitat and whether suitable habitat is present in the project area. It also displays the direct and indirect effect of the project on the habitat of the species present.

BCC Table 1. Birds of Conservation Concern for the Great Basin Conservation Region 9

Species	General Habitat Requirements	Impacts to Habitat	
		No Action	Proposed Action
Bald Eagle	**Associated with large bodies of water, forested areas near the ocean, along rivers, and at estuaries, lakes and reservoirs.**	**Discussed in TES section.**	
Black Rosy-finch	Rare in Oregon found above timberline among bare rock outcroppings, cirques, cliffs, and hanging snowfields.	These habitat types are not found on Crescent RD.	
Black Swift	Nests on ledges or shallow caves in steep rock faces and canyons, usually near or behind waterfalls and sea caves. Forages over forests and open areas in montane habitats.	These habitat types are not found on Crescent RD.	
Black-chinned Sparrow	Erratic presence in ceanothus and oak hillsides in SW Oregon.	These habitat types are not found on Crescent RD.	
Brewer's Sparrow	A sagebrush obligate found in shrublands of contiguous big sagebrush, greasewood, rabbitbrush, and shadescale habitats.	These habitat types are not found on Crescent RD.	
Calliope Hummingbird	**Shrubby montane forest, mountain meadows, second-growth, and willow and alder thickets. Nests are in trees (frequently conifers) at meadow edges or in canyons or thickets along streams (NatureServe 2018).**	**Riparian areas and meadows are found within the project area. Natural processes without fire would result in continued lodgepole pine succession into meadows and riparian areas reducing willow thickets habitats. Recreation next to river also reduces willow.**	**Removal of encroaching lodgepole pine would decrease saplings, but increase potential for willows. Pulling dispersed sites away from riparian areas and restoring/protecting willows would increase habitat.**
Eared Grebe, (nb) non-breeding in this BCR	Found on shallow alkaline lakes and ponds where open water is intermixed with emergent vegetation.	No habitat within the project area.	
Ferruginous Hawk	Occupy habitats with low tree densities and topographic relief in sagebrush plains of the high desert and bunchgrass prairies in the Blue Mtns.	These habitat types are not found on Crescent RD.	
Flammulated Owl	**Mosaic of open mixed conifer (MCD) or ponderosa pine (PPD) forests containing mature or old-growth ponderosa pine with a mix of other tree species and canopy cover <50% for nesting, patches of dense thickets of forest with canopy cover >50% interspersed grassy openings creating edge habitat for foraging.**	**Suitable habitat for this species in the uplands. There would be no change in habitat with either alternative.**	

Species	General Habitat Requirements	Impacts to Habitat	
		No Action	Proposed Action
Golden Eagle	Inhabits shrub-steppe, grassland, juniper and open ponderosa pine and mixed conifer/deciduous habitats. Preferring open areas with cliffs and rock outcrops for nesting and open shrub component for foraging.	The habitat types associated with this species are not found in the project area.	
Greater Sage-Grouse, Columbia Basin DPS, (a) ESA candidate	Sagebrush obligate, found E. of the Cascades. They require large expanses of sagebrush with healthy native understories of forbes.	These habitat types are not found on Crescent RD.	
Green-tailed Towhee	In Oregon this species prefers vigorous sagebrush and upland shrub stands with high shrub species diversity interspersed with trees. Incidental observations of this species on the Crescent R.D have been noted in old clear-cuts on slopes that have become overgrown with manzanita and snowbrush with no overstory .	No habitat within the project area.	
Lewis's Woodpecker	**Open ponderosa pine ≤ 30% canopy cover, cottonwood riparian or oak habitats with an open canopy, brushy understory, dead and down material, available perches and abundant insects. Prefers burned old growth ponderosa pine Altman 2000**	**Discussed in TES section.**	
Loggerhead Shrike	Inhabits grasslands, pastures with fence rows, ag. fields, sagebrush with scattered juniper and open woodlands. Requires elevated perches throughout for hunting and nesting.	No habitat within the project area.	
Long-billed Curlew	Open grassland areas E of the Cascades. Found in small numbers in estuaries along the coast.	No habitat within the project area.	
Marbled Godwit, (nb) non-breeding in this BCR	Migrant along the coast prefer coastal mudflats, sandy beaches, wet margins of large reservoirs or brackish lakes and sewage ponds.	The range and habitat types associated with this species are not found within Deschutes NF.	
Peregrine Falco,(b) ESA delisted	Wide range of habitats, nests on cliff ledges, bridges, quarries.	No habitat within the project area	
Pinyon Jay	In Oregon, Pinyon-juniper woodland, sagebrush, and scrub oak habitats.	The habitat types associated with this species are not found within Crescent RD.	
Sage Sparrow	Found in southeast. and central Oregon. Associated with semi-	The habitat types associated with this species are not found within Crescent RD.	

Species	General Habitat Requirements	Impacts to Habitat	
		No Action	Proposed Action
	open evenly spaced shrubs 1-2 m high in big sage up to 6,800 ft.		
Sage Thrasher	A sagebrush obligate dependent on large patches and expanses of sagebrush steppe and bitterbrush with shrub heights in the 30 -60 cm height. Prefers bare ground over grassy understories.	The habitat types associated with this species are not found within Crescent RD.	
Snowy Plover, (c) non-listed subspecies or population of T&E species	E. of Oregon Cascades a summer resident breeding on alkali flats and salt ponds. On the S. Oregon coast they nest on open sand areas along the upper beach and on un-vegetated spits at mouths of small estuaries.	The habitat types associated with this species are not found within Crescent RD.	
Tricolored Blackbird	Oregon colonies occur in hardstem bulrush, cattail, nettles, willows, and Himalayan blackberries.	Crescent RD is outside of the tri-colored blackbird range. There are no documented sightings of tricolored blackbirds on the Crescent RD.	
Virginia's Warbler	In OR likes high elevation steep-sloped, xeric, pinion- juniper and oak woodland habitats.	The habitat types associated with this species are not found within Crescent RD.	
White-headed Woodpecker	**Ponderosa pine or mixed conifer forests (< 40 percent canopy cover) dominated by old growth ponderosa pine and open habitats where standing snags and scattered tall trees remain.**	**Discussed in TES section.**	
Williamson's Sapsucker	**E. Cascades, mid to high elevation, mature open and mixed coniferous - deciduous forests. Snags are a critical component for nesting.**	**Discussed in MIS section.**	
Willow Flycatcher,(c) non-listed subspecies or population of T or E species	**Associated with riparian shrub dominated habitats, especially brushy/willow thickets.**	**Habitat occurs in a patch distribution along the river. Natural processes without fire would result in continued lodgepole pine succession into meadows and riparian areas reducing willow habitats. Recreational use next to river also reduces willow.**	**Removal of encroaching lodgepole pine would increase potential for willows. Pulling dispersed sites away from riparian areas and restoring/protecting willows would increase habitat.**
Yellow Rail	**Found in large shallowly flooded sedge meadows at 4,100 – 5,000 ft. with a cover of senescent and live vegetation ~50%.**	**No Habitat. Discussed in TES section.**	

Species	General Habitat Requirements	Impacts to Habitat	
		No Action	Proposed Action
Yellow-billed Cuckoo, (w. U.S. DPS)	A rare, irregular visitor east of the Cascades (Marshall et al. 2003). Most reports of this bird in eastern Oregon are from riparian areas dominated by cottonwood and willows (Marshall et al. 2003; NatureServe 2014). No known breeding population in OR.	The habitat types associated with this species are not found the project area.	
Yellow-billed Loon	Winters along the coast from AK to Baja CA. Transients can be found on inland large bodies of water.	The habitat types associated with this species are not found the project area.	
(Abbreviations: Deschutes National Forest = Deschutes NF, Crescent Ranger District = Crescent RD and ULDR Project = PA), OR=Oregon.			
Birds of Conservation Concern (BCC) come from the US Fish and Wildlife Service Birds of Conservation Concern – BCR 9 (Great Basin) [2008];			
(a)ESA candidate, (b) ESA delisted, (c) non-listed subspecies or population of Tor E species, (d) MBTA protection uncertain or lacking, (nb) non-breeding in this BCR.			

LANDBIRD CONSERVATION STRATEGY FOCAL SPECIES (LBFS)

INTRODUCTION

The strategy for achieving functioning ecosystems for landbirds is described through the habitat requirements of "focal species". By managing for a group of species representative of important components in a functioning coniferous forest ecosystem, many other species and elements of biodiversity also will be conserved. E.O. 13186 and the MOUs signed by the FS and BLM with the FWS require agencies to incorporate migratory bird conservation into agency planning processes whenever practicable. The Partners in Flight plans assist federal agencies in achieving this direction.

The Oregon-Washington Chapter of Partners in Flight participated in developing a publication for conserving landbirds in this region. *A Conservation Strategy for Landbirds of the East-Slope of the Cascade Mountains in Oregon and Washington* was published in June 2000 (Altman 2000). This strategy has been used since its development in planning and projects analysis. The project falls within the Central Oregon subprovince. The species selected in the conservation strategy represent focal species for habitats types or features considered at risk. LBFS Table 1 shows the focal species for Central Oregon.

LBFS Table 1. Landbird Focal Species for Central Oregon

Habitat	Habitat Feature	Focal Species for Central Oregon	Present In the Analysis Area	Species or Habitat affected by project
Ponderosa Pine	Large patches of old forest with large trees	**White-headed woodpecker**	**Yes**	**No**
	Large trees	**Pygmy nuthatch**	**Yes**	**No**
	Open understory with regenerating pines	Chipping sparrow	No	No
	Patches of burned old forest	Lewis' woodpecker	No	No
Mixed Conifer Late-Successional	Large trees	**Brown creeper**	**Yes**	**No**
	Large snags	**Williamson's sapsucker**	**Yes**	**Yes**
	Interspersion grassy openings/dense thickets	**Flammulated owl**	**Yes**	**No**
	Multi-layered/dense canopy	**Hermit thrush**	**Yes**	**No**
	Edges and openings created by wildfire	Olive-sided flycatcher	No	No
Lodgepole pine	Old growth	**Black-backed woodpecker**	**Yes**	**Yes**
Large Meadows	Wet/dry	Sandhill crane	No	No
Aspen	Large trees with regeneration	**Red-naped sapsucker**	**Yes**	**Yes**
Subalpine fir	Patchy presence	Blue grouse	No	No
Whitebark pine	Old growth	Clark's nutcracker	No	No

Potential Effects on Landbird Focal Species

There is no subalpine fir or whitebark pine habitat within the analysis area. There is also no habitat for the chipping sparrow, Lewis's woodpecker, olive-sided flycatcher and sandhill crane. Effects of the ULDR project on white-headed and Lewis's woodpecker can be found in the TES section of this analysis, the black-backed woodpecker, red-naped sapsucker and Williamson's sapsucker in the MIS section and the flammulated owl in the BCC section. The remaining Focal Species, pygmy nuthatch, brown creeper, and hermit thrush, all have habitat within the uplands. The ULDR project would not alter habitat for any of these species. There would be no direct, indirect, or cumulative effects for these landbird focal species.

I FOREST PLAN – Management Indicator Species

ge for ding	Standards and Guidelines	Compliance
MA-A	**WL-1** Management areas have been established for these species. Should one of these species be encountered outside of the Management Area, the following process will apply. 1. A biological Evaluation will be conducted or reviewed to determine if a species use of the area is incidental or essential. 2. If it is determined to be essential, protect from adverse modification. 3. For newly discovered essential habitat, conduct an environmental analysis under the NEPA process to determine if it is necessary to designate the area as essential habitat.	N/A - Project is outside the Range of the Northern Spotted Owl
MA3-A		Meets - No BEMA within the project area, no designated essential habitat within the project area. Mitigation measures in place to protect nesting should a nest be found during implementation
	WL-2 Nest site protection and maintaining an average of 4 dominant overstory trees per acre suitable for nest and perch trees – with ponderosa pine favor. **WL-3** Protect from disturbing activities 1/4 mile from nest (1 mile for explosives) Golden Feb 1- July 31, Osprey April 1-August 31, Red-tailed hawk march 1 -August 31. **WL -4** Disturbing activities site specific, evaluated prior to planned activities. **WL-5** If restriction must be compromised, project activity at the end of the period is least likely to cause nest abandonment. A nest site may be considered inactive for the year if nesting activity is not evident by May 15.	Meets - No known nests within the project area these species. No large trees that may provide nesting/roosting/perching habitat would be removed. Mitigation measures in place to protect nesting should a nest be found during implementation.
53	**WL-6** Nesting habitat provided in MC, MH and PP outside of Wilderness and OCRA. Habitat also in LP where available. **WL-7** Nesting habitat available in MA 15, 6, 12, 2, 4, 10, 13, 14, Metolius. **WL-8** Suitable habitat may be available in MA 3, 5, 17, Metolius. **WL-9** Nest sites will be select on basis of use whenever possible. Characteristics: mean cc 60%+. 195 trees/ac, 100 years+, at least 25 acres. **WL-10** Avoid locating new roads within nest sites stands. **WL-11** Disturbing activities vary by site, evaluation of potential disturbance made prior to planned activities. **WL-12** If restriction must be compromised, project activity at the end of the period is least likely to cause nest abandonment. A nest site may be considered inactive for the year if nesting activity is not evident by May 15. Eastside Screens **AMENDED** to include (1) Protect every known active and historically used goshawk nest-site from disturbance. "Historical" refers to known nesting activity occurring at the site in the last 5 years. Seasonal restrictions on activities near nest sites will be required for activity types that may disturb or harass pair while bonding and nesting. (2) 30 acres of the most suitable nesting habitat surrounding all active and historical nest tree(s) will be deferred from harvest. (3) A 400-acre "Post Fledging Area"	Meets -No known nests within the project area. There would be no actions to alter nesting habitat or nest stand. Mitigation measures in place to protect nesting should a nest be found during implementation.

Cooper's Hawk (*Accipiter cooperii)*	4-53	**WL-13** Nesting habitat provided in MC and PP outside of Wilderness and OCRA. **WL-14** Nesting habitat available in MA 15, 6, 12, 2, 4, 10, 13, 14, Metolius. **WL-15** Suitable habitat may be available in MA 3, 5, 17, 20s. **WL-16** Prospective sites with appropriate vegetative structure and physiography will be identified before they have been PCT or commercially thinned. **WL-17** Nest sites selected on present or past use, or where following characteristics will be used: mean cc 60%+, 365 TPA, 50-80 years, at least 15 acres. **WL-18** Avoid locating new roads within nest sites stands. **WL-19** Disturbing activities vary by site, evaluation of potential disturbance made prior to planned activities. **WL-20** If restriction must be compromised, project activity at the end of the period is least likely to cause nest abandonment. A nest site may be considered inactive for the year if nesting activity is not evident by June 15.	Meets - No known nests within the project area for these species. No large trees that may provide nesting/roosting/perching habitat would be removed. Mitigation measures in place to protect nesting should a nest be found during implementation.
Sharp-shinned Hawk (*Accipiter striatus*)	4-53,54	**WL-21** Nesting habitat provided in MC and PP outside of Wilderness and OCRA WL-**22** Nest grove are even-aged stands of 40-60 year-old conifers with a dense canopy and can occur in dense second growth beneath over-mature overstory **WL-23** Nesting habitat available in MA 15, 6, 12, 2, 4, 10, 13, 14, Metolius. **WL-24** Suitable habitat may be available in MA 3, 5, 17, 20s. **WL-25** Nest sites selected on present or past use, or where following characteristics will be used: mean cc 65%+, 475 TPA, 40-60 years, at least 10 acres. **WL-26** Prospective sites with appropriate vegetative structure and physiography will be identified before they have been PCT or commercially thinned. **WL-27** Avoid locating new roads within nest sites stands. **WL-28** Active nest sites should be protected from disturbing activities within 1/4 mile (1 mile for the use of explosives) of the nest by restricting operations during the nesting period of April 15-Aug 31. Disturbing activities vary by site, evaluation of potential disturbance made prior to planned activities. **WL-20** If restriction must be compromised, project activity at the end of the period is least likely to cause nest abandonment. A nest site may be considered inactive for the year if nesting activity is not evident by June 15.	Meets - One known nests within the project area for these species. Nest is outside any proposed actions. No large trees that may provide nesting/roosting/perching habitat would be removed. Mitigation measures in place to protect nesting and additional nest area found during implementation.
Great Gray Owl *(Strix nebulosa)*	4-54	**WL-30** Habitat suitable will be provided. **WL-31** Active nest sites will be protected by maintaining forested stand of at least 30 acres. Its configuration will include the area between the nest and adjacent forested riparian or meadow ecosystems, and maintain at least 300 feet of forest between the nest and an opening. **WL-32** To maintain the forested perimeter of meadows for long-term utility as overhead cover for the owl to travel through, up to than 1/3 of the area included in a strip-varying in width from at least 200 feet to 600 feet-around the meadow may be selectively harvested every other decade to facilitate the natural regeneration process. **WL-33** Active nest sites will be protected from disturbing activities within 1/4 mile (1 mile for the use of explosives) of the nest by restricting operations during the nesting period of March 1 - June 30. **WL-34** If the specified restriction period must be compromised, project activity at the end of the period (e.g. the last month or two) is least likely to cause nest abandonment. A nest site may be considered inactive for the year if nesting activity is not evident by May 15.	Meets - No known nests within the project area for these species. No large trees that may provide nesting/roosting/perching habitat would be removed. Mitigation measures in place to protect nesting should a nest be found during implementation.

Great Blue Heron (*Ardea herodias*)	4-55	**WL-35** The vegetative character of rookeries will be protected, and seasonal restrictions on disturbing human activities should be in effect from March 1 through August 31 for a 1/4-mile radius around the nest tree(s). **WL-36** Future nesting trees for existing rookeries will be provided. Emphasis on large, mature, and over-mature Ponderosa pine.	Meets - No known nests within the project area for these species.
Woodpeckers *(Cavity Nesters)*	4-55, NWFP C-46, Eastside Screens -	**WL-37** In coniferous forest, sufficient snags will be maintained to provide 40 percent of potential population levels of cavity nesting species within even-aged harvest units of the General Forest, visual areas, and Deer Management Area allocations. In uneven-aged harvest units, within the management areas noted above, live replacement trees will be left during any harvest to assure 60 percent of cavity nesting potential through the rotation, except where natural deficits occur in diameter classes. Compliance will be based on the harvest unit area rather than an individual acre evaluation. In all other management areas, at least 60 percent of cavity nesting species potential population needs will be provided. **WL-38** Specific guidance will be provided by the Deschutes National Forest Wildlife Tree Implementation Plan. Amended by Eastside Screens to apply to lands east of the range of the NSO to provide for 100% of potential population levels of cavity excavators.	Meets - No snags are proposed for removal with this project.
Waterfowl	4-55	**WL-39** Waterfowl production will be increased where possible with appropriate habitat enhancement, and continue maintenance of waterfowl nesting boxes and platforms.	Meets - project may enhance habitat for a few species
American Peregrine Falcon **(Sensitive Species)**	4-55	**WL40** Reported sightings will be evaluated for authenticity. In cooperation with the Oregon Department of Fish and Wildlife and the Endangered Species Branch of the USDl Fish and Wildlife Service, verification of the presence of the species will be pursued. **WL41** In areas of suspected occupancy, the following process will apply. A Biological Evaluation will be conducted or reviewed by a journey-level wildlife biologist to determine if species use of the area is incidental or essential. If essential habitat, protect it from adverse modification. For newly discovered essential habitat, conduct environmental analysis to determine if it is necessary to designate the area as essential habitat.	No habitat in project area
Wolverine (Proposed and **Sensitive Species)**			No habitat in project area
Elk *(Cervus elephas)*	4-55, 4-56	**WL-42** Elk management objectives were developed with the Oregon Department of Fish and Wildlife. **WL-43** Elk are found in certain key habitat areas. Within these areas, management will provide conditions needed to support at least 1,500 summering elk and 240 wintering elk. **WL-44** Elk also use riparian areas for calving. The management of riparian areas will incorporate elk calving needs to the extent they do not conflict with the needs or objectives of riparian- dependent resource management. Management of adjacent upland areas does not need to incorporate elk needs unless they are within a key area. The following areas are considered key (Crescent Ranger District): Upper Spruce Creek, Davis Lake, Hemlock Creek, McCool Butte. **WL-44** The management of riparian areas will incorporate elk calving needs to the extent they do not conflict with the needs or objectives of riparian-dependent resource management. WL-45 through 51 deal with specific management within Key Elk Areas.	Consistent - There are no Key Elk Areas within the project area. Calving restrictions are included in mitigation measures.

Mule Deer - Outside of Deer Management Area 7 (Summer Range)	4-58,4-59	**WL-52** Deer summer range includes the entire Forest outside Deer Habitat Management Areas (although some use during summer takes place in some transition/winter range areas). Herd management objectives have been established jointly with the Oregon Department of Fish and Wildlife. **WL-53** Target open road densities are 2.5 miles per square mile to achieve deer summer range habitat effectiveness targets unless impacts on deer can be avoided or the proposed project would result in a net benefit to deer habitat. The density will be applied as an average for an implementation unit and will be used as a threshold requiring a further evaluation. **WL-54** Hiding areas must be present over at least 30 percent of National Forest land in each implementation unit. To be suitable as a hiding area, a stand must meet one of the following: Six acres or larger stand capable of hiding 90 percent of a standing adult deer from view of a human at a distance of 200 feet. (Thomas, 1979) **or** Six acres or larger stand with an average height of 6feet and which has not been thinned in 15 years, **or** Residual clumps of one half acre or larger stands within units with advanced regeneration and at least 12 greater than 7 inch trees per acre remaining after harvest. Clumps should be located away from roads. Only the clumps will be considered when quantifying hiding area. **WL-55** Hiding areas will be dispersed throughout the implementation unit. **WL-56** Travel corridors will be provided where needed by linking stands meeting the clump/unit conditions. **WL-57** Hiding areas are assumed to provide suitable thermal cover conditions on summer range. **WL-58** If possible, a narrow strip of trees should be left along roads to reduce view distances. **WL-59 Black Bark Pine Management** Approximately 10 percent of treated stands will be in clumps that will provide visual screening throughout the area and meet the following conditions: *A minimum of one-half acre in size which have not been thinned or harvested for at least 20 years. Small clumps will be suitable in dense stands but larger (4 or 5 acre) clumps may be needed in more open stands.**WL-60** Site-specific habitat needs should be identified at the project level through the interdisciplinary process.*	Meets - Open Road densities in Bunny Butte 1.4 mi/mi2 and Gilchrish Junction 2.1 mi/mi2 are below target. Cover in each 61% and 44%. Project closes unauthorized roads and trails and creates a road system that results in larger blocks of habitat.
American Marten *(Martes americana)*	4-59	**WL-61** Pine marten prefer extensive stands of relatively dense lodgepole pine, mixed confer, or mountain hemlock forest containing abundant dead woody material as habitat for rodent prey. **WL-62** Habitat will be available in management areas emphasizing Old Growth, Wilderness, Undeveloped Recreation, Research Natural Areas, Spotted Owls, Bend Municipal Watershed, and the Oregon Cascade Recreation Area, Metolius Special Interest, Research Natural Areas, Special Interest Areas, Bald Eagle Osprey, Winter Recreation, Wild & Scenic Rivers, and big game cover areas located within management areas not mentioned above may also provide suitable habitat. **WL-63** In preferred forest types, concentrations of down woody material will be left at an average rate of approximately one per acre after any timber harvest. Concentrations incorporating high tree stumps, logs, or snags are especially desirable structure s provides resting-site locations, an entry point for foraging below crusted snow, and habitat for rodent prey as the stand returns to suitability for marten occupancy.	Meets - Project does not propose removal of down wood but alters roads open to firewood. Firewood decisions have minimum requirements to meet deadwood standards.

Townsend's Big-eared Bat **(Sensitive Species)**	4-59, 4-60	**WL-64** This Sensitive species will be protected by: (1) maintaining human presence below disturbance levels during periods of use by bats at hibernacula and nursery colonies; (2) restricting public knowledge of - and access to -these locations; (3) maintaining the character of forest vegetation at the entrance of important caves; and (4) enhancement of habitat conditions. **WL-65** At caves already known to be important to this species, monitoring will occur. **WL-66** If monitoring determines that human disturbance is having a detrimental effect restrictions will be imposed to reduce disturbance to an acceptable level. **WL-67** Surveys will be completed to determine the distribution of the Townsend's big-eared bat within the Forest. **WL68** Campfires will be prohibited in important caves, and posted. **WL-69** Knowledge about the location of-and ease of access to-important caves should be restricted to discourage public visitation. **WL-70** Because most lava-tube caves have air movement that could be significantly influenced by their entrance environment, the character of existing forest vegetation will be maintained at these openings. **WL-71** Artificial watering devices near day-roost or nursery colony caves are beneficial.	No habitat in the project area.
Down Wood Associated Species and Habitat	4-60,	**WL-72** Fallen trees and other woody debris will be retained in sufficient quantity, distribution, and physical characteristics to provide habitat for viable populations of dependent wildlife species over time. An average of at least 3 cull logs-per-acre, plus 3 additional logs-per-acre in more advanced stages of decomposition, will be retained after timber management activities. Minimum qualifying sizes are 10 inches in diameter at the small end and 15 feet long, but larger sizes should be selected If present. Charring of logs should be minimized. **WL-73** Where logs of the recommended size and density are not available, an average of 1 slash pile (approximately 100 square feet) or concentration (approximately 200 square feet) per acre will be retained to supplement qualifying logs. **AMMENDED** by the East Side Screens to add: a minimum of 20-40 lineal feet equal to 12 inches or greater diameter in PP, 100-140 lineal feet equal to 12 inches diameter or greater in MC and 120-160 lineal feet 8 inches or greater diameter in LP.	Meets - Project does not propose removal of down wood but alters roads open to firewood. Firewood decisions have minimum requirements to meet deadwood standards.

MANAGEMENT ALLOCATION SPECIFIC STANDARD AND GUIDELINES				
MA #	**Management Area**	**Standard and Guidelines**	**LRMP page for exact wording**	**Project Meets**
8	General Forest	**M8-15** Minimum standards for wildlife habitat will be the Forest-wide standards/guidelines. Higher levels of wildlife habitat will be pursued as long as they will not conflict with timber management objectives	4-118	Meets- Wildlife habitat enhancement increases would not conflict with timber management objectives.
9	Scenic Views	**M9-79** In foreground areas, wildlife snags and snag replacement trees will be maintained only where they contribute toward the Desired Visual Condition for the tree species. Where snags and snag replacemnt trees do not contribute towards the DVC, the number, sizes and placement of wildlfie trees will be changed in the Scenic Views Management Area. **M9-80** Snags determined to be safety hazards in areas of concentrated public use will be topped or removed. Grouping snags is generally preferable over even-distribution. **M9-81** where consistend with the desired Visual condition, wildlife habitat improvements will focus on watchable wildlife. **M9-82** When managing vegetation along major highways which have deer migration routes crossing them, consieration will be given to minimzing risks of vehicular-deer collisions.	4-130	Meets- No snag removal is planned, no hazard trees have been identified. Vegetation management is along riparian area creating meadows which are consistent with desired Visual condition
RHCA	Riparian Habitat Conservation Areas	See Fisheries and Aquatics Report		
Eastside Screens		INTERIM MANAGEMENT DIRECTION ESTABLISHING RIPARIAN, ECOSYSTEM AND WILDLIFE STANDARDS FOR TIMBER SALES REGIONAL FORESTER'S FOREST PLAN AMENDMENT #2 6/12/95 Appendix B		The project is not a timber sale, it does provide for protection of goshawks. The project also does not propose to remove any snags or down wood.

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